





Welcome to our 2018/2019 Annual Performance Report

This is our fourth Annual Performance Report and it covers the period from April 2018 to March 2019. It tells our customers and stakeholders about the progress we are making to deliver our commitments as well as providing information on our service levels, cost information and financial performance.

This Annual Performance Report provides information required by Ofwat (the Office of Water Services), the body that regulates the water sector to protect customer interests.

Guide to our Annual Performance Report



Reading our APR

Our Annual Performance Report (APR) is designed to be read on screen using a PDF viewer. You can print our APR if you prefer, but because it's quite a long document you may wish to print in black and white and use the contents page to print the sections you wish to read.



Information is just a click away

To navigate quickly to the section of the APR you are interested in, simply click on the section on the contents page. We have included links like this throughout our APR. Look for the hand icon on your PDF viewer to help you quickly navigate.



Definitions

Last year we included the glossary in section 2 of our APR, but our customers told us that they would prefer to see the glossary included in the appendix and include meaningful definitions throughout the APR.

In this APR, we have included definitions on the same page as the content to make it easier to understand. An example for outcome delivery incentives is shown below:



Outcome Delivery Incentives (ODI's)

ODIs is a collective term for the financial incentives – positive and negative – that Ofwat has applied to the delivery of our five-year plan. 'Rewards' allow us to charge more over the next five years (in this case, 2020-2025), while 'penalties' require us to charge less. Some of these ODIs measure performance in each of the five years of our current plan, while others apply only to the whole five years.

Help

Throughout our APR we will provide additional help in the form of:



Additional information:

These will provide useful information to help explain our APR.



What does this mean?

We will explain some of the more complicated technical language in plain English, providing helpful examples where appropriate.

Contents

This report is set out into colour-coded sections to help you navigate the report easily. Click on the section you are interested in on the contents page and it will navigate you to that section.

The report is structured as follows:

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| 3. Introduction to our performance | 34 |
| In this section, we explain what our customer outcomes and performance commitments are and how the financial rewards and penalties work. | |
| 4. Review of our performance | 56 |
| In this section, we explain how we are performing against our performance commitments and our methodology for how we calculate outcome delivery incentives. | |
| 5. Our process to provide information that can be trusted | 110 |
| This section summarises the assurance activities we have completed for the information in this report and the steps we are taking to improve trust in our information. | |

6 Our engagement with our stakeholders and customers	142
In this section, we'll explain how we have engaged with our stakeholders and customers to create our annual performance report.	
7 Our governance	150
In this section, we include information on our company structure and how we are governed.	
8. Regulatory information	160
This section includes the information that we must report to our economic regulator, Ofwat. Information is shown in tables with supporting explanatory commentary.	
9. Risk and compliance statement	342
In this section we set out how we have complied with the statutory, licence and regulatory obligations where Ofwat is our regulator.	
Appendix 1. Financial auditor's opinion	358
This section includes a statement from our financial auditor, Deloitte.	
Appendix 2. Technical Assurance Statement	364
This section includes a statement from our technical assurance provider, Halcrow.	
Appendix 3. Accounting Separation Methodology Statement	374
This section provides information on the methodology used to produce the regulatory financial information. It includes details on how costs are allocated across different elements of the business.	
Appendix 4. Disclosures	412
This section includes the disclosures required by our regulator, Ofwat.	
Appendix 5. Glossary	458
See all of our definitions here in the glossary.	

Annual performance report highlights

Section 4 - Review of our performance

This is a summary of our performance throughout the year and includes information on how we have checked and assured this information so that our customers and stakeholders can trust it.

We have included:

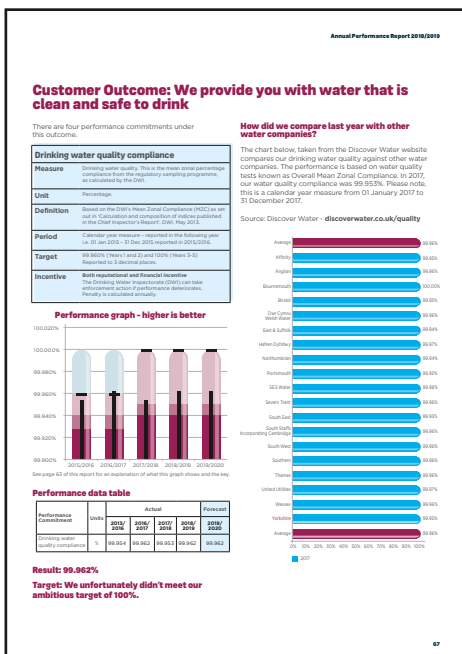
- A performance summary.
- Outcome performance information on how we are doing in meeting the commitments, we made to our customers.

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Section 8 – Regulatory information

This includes all the information that we must report to our economic regulator, Ofwat. Information is shown in tables with supporting explanatory commentary.

It includes:

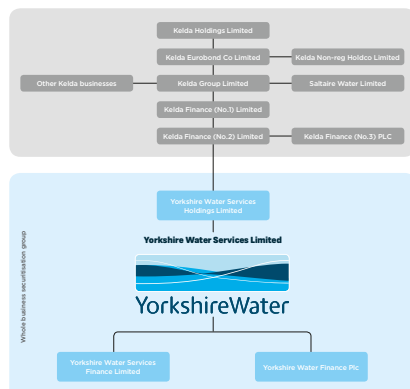
- Regulatory financial reporting. Information on our overall financial position and a breakdown of our costs.
- Price review and additional segmental reporting. Financial information by price control and our underlying operational processes.
- Additional regulatory information.

Other disclosures

Information on our corporate structure – this provides additional information to the summary information provided within Section 7 on our governance.

Corporate structure

Yorkshire Water Services Limited is part of the Kelda Holdings Limited group of companies. The diagram below shows a summary of the companies in the group structure around Yorkshire Water Services Limited. Other active companies are described on the following page. We have condensed this structure to remove our inactive companies which exist for legacy reasons but are no longer in use.



Appendix 4 - Disclosures

Ofwat has specified the requirement of certain disclosures which are included in this report.

Some disclosures are the same as those in the Annual Report and Financial Statements but are shown in full within this document, to enable this report to be a standalone document.

1.

Introduction

In this section

01.

We start the introduction by explaining where our annual performance report sits in our cycle of publications and explaining the supporting publications available. We also list some of the changes we have made to our APR this year.

02.

We then go over some of the highlights of this year's APR and the improvements we have made in making this our most accessible APR.

03.

Finally, we include some information on who we are, what we do and our commitments to customers.

The assurance framework

We want you to be able to have confidence in what we do, and we want you to be able to trust the information we publish. To meet this objective, we follow an assurance framework starting with our Risks, Strengths and Weaknesses Statement publication, where we consult with our customers and stakeholders to understand what they need us to focus on in the year. We call these our 'targeted areas'.

We finish the assurance framework with our APR, where we explain the assurance we have carried out on the 'targeted areas' over the year.

On the following pages, we explain the stages of the assurance framework.

We were placed in the targeted category following the January 2019 Ofwat Company Monitoring Framework (CMF) assessment, along with most other water companies. We know there is more we can do to improve the quality of our publications.

Prescribed

Water companies are placed in this category when they have not met the reporting requirements that customers and stakeholders expect.

Targeted

Water companies are placed in this category when they have not consistently met the reporting requirements that customers and stakeholders expect.

Self-assurance

Water companies are placed in this category when they consistently meet the reporting requirements and demonstrate leading edge behaviour.

We will continue to challenge ourselves to make sure that the information we publish can be trusted by our customers so that we meet our aspiration to achieve the self-assurance status in the next CMF assessment. You can read about the improvement steps we have taken towards achieving self-assurance status in Section 6.



Definition

Ofwat

The Office of Water Services, which is the economic regulator of water services in England and Wales.

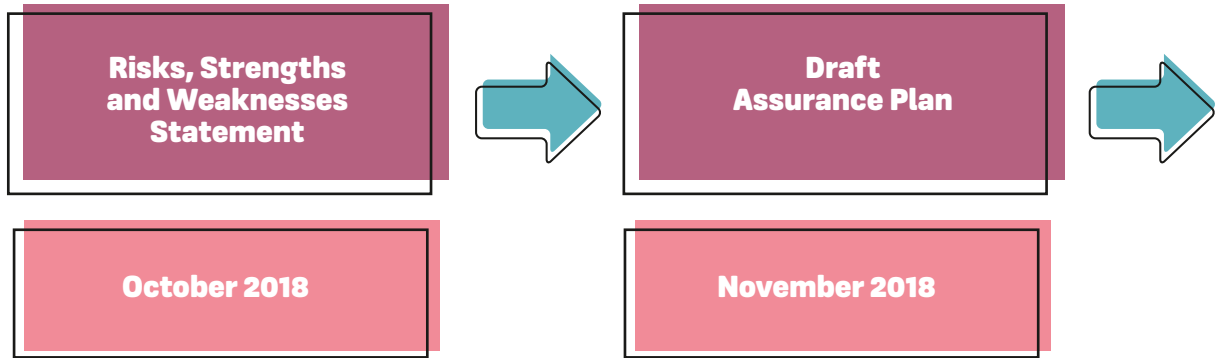


Additional information:

What is the Company Monitoring Framework (CMF)?

Our regulator Ofwat, has introduced a process for assessing the quality of the information we provide for our customers and stakeholders. It assesses whether the information is accurate, transparent, timely and tailored to its audience. This is called the CMF. Ofwat completes a CMF assessment annually and places companies into one of three assurance categories: self-assurance; targeted; or prescribed. Each year, water companies can move up from 'targeted' status to 'self-assurance', or from 'prescribed' to 'targeted' status. However, they cannot move up two categories in one year, for example, from 'prescribed' to 'self-assurance'. They can also move down.

Assurance framework stages



October 2018

November 2018



Description of the publication

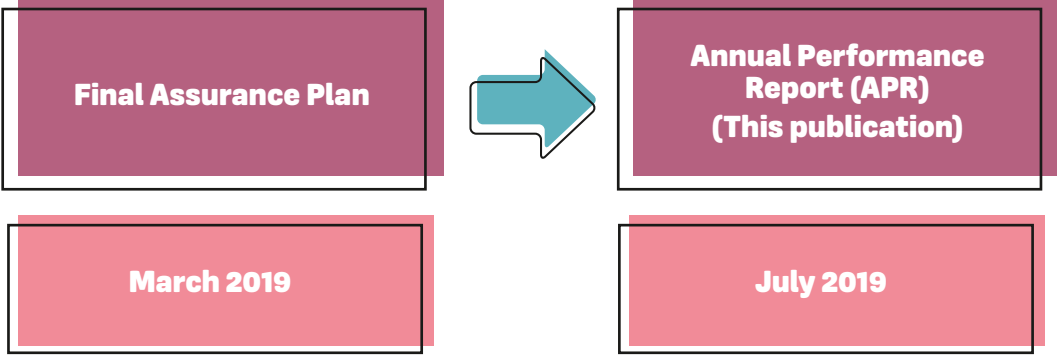
The assurance framework process began with the Risks, Strengths and Weaknesses Statement which we published in October 2018. We proactively engaged with our customers and stakeholders to identify the areas of our reporting we would target to improve.

The action we take at each stage of assurance

Identify targeted areas of assurance.

Our Draft Assurance Plan provides information on the processes and the steps we are taking to make sure the information we publish is accurate, easy to understand and accessible. We also described the assurance we will carry out on the targeted areas identified in our Risks, Strengths and Weaknesses Statement. We proactively engaged with our stakeholders and customers to get feedback on our draft assurance plan, giving them the opportunity to shape our assurance going forward.

Plan enhanced assurance activities for targeted areas and consult on the assurance activities.



We published a Final Assurance Plan which incorporated the feedback we received from the engagement on our Draft Assurance Plan.

We have included a summary of the assurance we have completed on this publication and on our targeted areas in Section 5.

Publish final assurance activities for targeted areas following consultation.

Supporting publications

We publish a suite of documents alongside our APR which provide additional information on our services and performance.



Our Performance Summary 2018/2019

This is a summary of our Annual Performance Report. We have written our Performance Summary in collaboration with our customers and the Yorkshire Forum for Water Customers. This report achieves the Plain English Crystal Mark.

www.yorkshirewater.com/reports



Risk & Compliance Statement

Our Risk and Compliance Statement provides confirmation that we have complied with the requirements of our licence to operate as a water supplier and the requirements set out in law. It also provides information on the steps we are taking to manage and mitigate any risks identified. This is also included in Section 9 of this APR.

www.yorkshirewater.com/reports



Yorkshire Forum for Water Customers Statement

The Yorkshire Forum for Water Customers (the Forum) has published an independent statement on our performance. This report achieves the Plain English Crystal Mark. You can view the statement here:

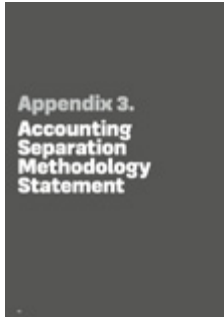
www.yorkshirewater.com/customerforum



Data Assurance Summary

Our Data Assurance Summary provides information on the outcome of assurance we carry out throughout the year for all information we have published in 2018/2019.

www.yorkshirewater.com/reports



Accounting Separation Methodology Statement

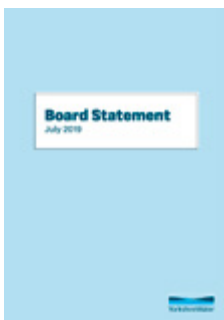
This statement allows our customers to understand the basis against which we have prepared the separated accounts. We include our cost allocation bases (what drives our costs) and any changes year on year. It also includes how we prepare the information on upstream services. We report the main factor causing changes to our costs ('cost drivers') for each of the upstream services we provide. This is included in Appendix 3 of this APR.



Summary of our Risks, Strengths, and Weaknesses statement

This document provides a summary of our Risks, Strengths and Weaknesses statement. It includes our approach to gathering information and our targeted areas of assurance. This report achieves the Plain English Crystal Mark.

www.yorkshirewater.com/reports



Board statement on our company direction and performance

This statement sets out how we are delivering for our customers and stakeholders that rely on our service. This is included in Section 2 of this APR.



Additional information:

The Risk and Compliance Statement, Board Statement on our company direction and performance and the Accounting Separation Methodology Statement are included within this APR.

Other publications

To respond to the needs of our many stakeholders we publish a number of other documents on our performance and plans, along with additional information for specialist groups and to fulfil legal requirements.



Kelda Eurobond Co Ltd Accounts

Kelda is the owner of Yorkshire Water. This publication provides information on Kelda's performance.

www.keldagroup.com/investors/document-library/



Yorkshire Water Annual Report and Financial Statements

Our Annual Report and Financial Statements (ARFS) provides information on our financial performance and how we are progressing with strategic business objectives. This report is written mainly for our shareholders and investors but is available to everyone.

www.yorkshirewater.com/reports



Global Reporting Initiative Report

Yorkshire Water recognises that alongside financial information, stakeholders are becoming increasingly interested in our economic, environmental and social impacts. To enable our drive towards greater transparency in these areas, we have produced our first report prepared in accordance with the Global Reporting Initiative (GRI) Standards: Core Option, to complement our ARFS and APR. The GRI represents global best practice in sustainability reporting.

www.yorkshirewater.com/reports

Supporting websites

We can't always fit all the information we would like to into our APR, instead we reference websites which contain useful supporting information.

External websites



Discover Water

Some of our information is published on the Discover Water website, allowing customers and stakeholders to see comparative performance between water companies easily.

www.discoverwater.co.uk



Ofwat

Ofwat also publishes information about how companies are performing in reports and publications. These can be found by visiting

www.ofwat.gov.uk

Our internal webpages



Our Performance – How we're doing

We want to let you know about how we're doing in delivering water and waste water services and how we're operating as the leading responsible business that we strive to be. On this webpage we share lots of information on how we are performing against our performance commitments.

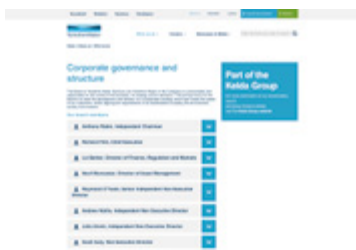
www.yorkshirewater.com/ourperformance



Yorkshire Forum for Water Customers

This webpage provides details on the membership of the group, minutes of recent meetings and information on the challenges which the Forum have provided during their ongoing customer consultation. It also includes the independent reports published by the Forum.

www.yorkshirewater.com/customerforum



Corporate governance and structure

This webpage provides information on the members of our Board, our company structure chart and corporate governance terms of reference and policies.

www.yorkshirewater.com/about-us/what-we-do/corporate-governance-and-structure

Finding our reports

Our publications can be found on our reports page. You can navigate to our reports page from our Yorkshire Water homepage or by clicking on 'About us' located at the top of our homepage.



At the top of the webpage you will find a link to this report and links to its supporting publications. To the right of the webpage, there is a video on our performance and company structure.



Further down the webpage, we have our Assurance Plan and our Risks, Strengths and Weaknesses Statement.

Finally, we have created an archive of our reports from earlier years.



Here is an archive of our reports from earlier years

- [Our reports 2018](#)
- [Our reports 2017](#)
- [Our reports 2016](#)
- [Our reports 2015](#)
- [Our reports 2014](#)

What have we changed in our APR?

We have continued to use the same format for this report that we used in our 2016/2017 and 2017/2018 APR.

We have made some improvements in this year's report

- We have moved the glossary to the appendix but included definitions to key words throughout the APR
- We have included a Board statement on company direction and performance which sets out how we are delivering for our customers and stakeholders that rely on our service
- We have included a short guide to our APR
- We have provided additional information on our performance commitments
- We have enhanced the commentary on our APR tables
- We have moved the information on performance commitments from the regulatory information section (was Section 7 in 2018/2019 and is Section 8 in this report) to Section 4 of the APR which brings all of our performance information into one section

The 2019 Price review (PR19)

We have published our proposed business plan for the next five year period, April 2020 to March 2025 (AMP7) in September 2018. Ofwat is in the process of scrutinising these proposals and is expected to determine the price, investment and service package that customers should receive for this period by the end of 2019. You can read our business plan and our proposals for the next five year period here.

www.yorkshirewater.com/ourbusinessplan

Impact of current performance on PR19

The PR19 process takes account of the impact of actual and predicted performance during the current period.

We have therefore provided additional detail within this year's APR on the actual and anticipated performance for the full 2015 – 2020 period.

About Us

Yorkshire Water at a glance



We provide essential water and waste water services to the people and businesses of the Yorkshire and Humberside region, playing a key role in the region's health, wellbeing and prosperity.

We supply water and waste water services and are custodians of essential infrastructure and the natural environment. We do all of this for about £1 a day for the average customer, amongst the lowest water and waste water bills in the country.

WHAT WE DO

We provide essential water and waste water services to the people and businesses of the Yorkshire and Humberside region, playing a key role in the region's health, wellbeing and prosperity.



Collecting, treating and supplying around **1.3bn litres** of water every day



Investing over **£1m every day** to maintain and enhance Yorkshire's network of water pipes, pumps and treatment works



Managing **28,000 hectares of land** to protect water quality and enable recreational opportunities



Managing **£1bn of water bills** every year and providing customer service when it's needed



Collecting, treating, and safely returning to the environment **1bn litres** of water every day



Recycling nutrients and generating energy from leftover human waste



All delivered by around **3,500 employees** using a fleet of over **2,000 vehicles** and increasingly complex technology, delivering for today and planning for the long-term

We're one of Yorkshire's biggest land owners

We collect water from three main sources

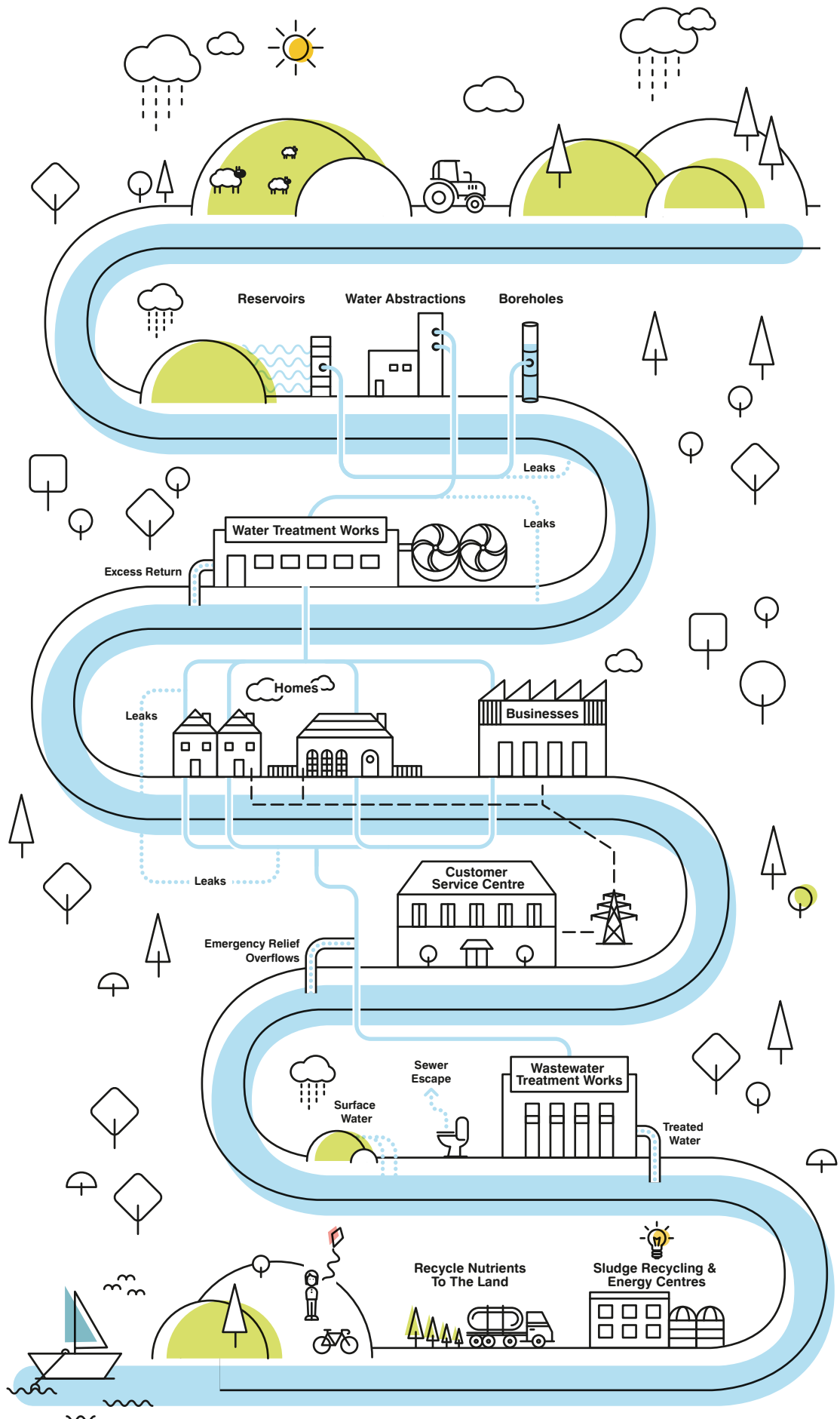
We manage 671 water and wastewater treatment works

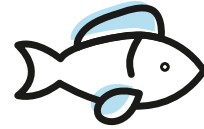
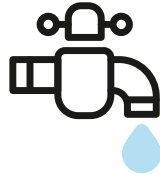
We supply water to homes and businesses across the county

Our customer service team supports our 5 million customers

We collect 1 billion litres of waste water every day

We safely return water back into the environment





This concludes the introduction of our APR, if you would like to learn more about the services we provide for our customers.

Click here

www.yorkshirewater.com/about-us/what-we-do





Get in touch with us

We welcome your comments and feedback on our Annual Performance Report.

If you have any questions, comments or would like to feedback on our Annual Performance Report or any of our other publications please get in touch with us using the contact details on this page.

Please do not hesitate to get in touch if you would like a paper copy of this report.

You can contact us in the following ways.



Email: publicaffairs@yorkshirewater.co.uk



Sending comments via our website link:
yorkshirewater.com/contactus



Or posting them to us:
Regulation Department
Yorkshire Water
Western House
Western Way
Bradford
BD6 2SZ

2. **Board statements**

Board Assurance Statement

Our aim is to produce an Annual Performance Report that covers the key information that our customers and stakeholders have told us they want to see and are interested in, while also meeting the requirements of our regulator, Ofwat.

We believe that good assurance needs to be provided at the right time, proportionate to the level of risk identified, asking the right questions and producing good evidence to support the statements made within this report. Our assurance approach is risk based (this means that we place more focus in areas that are higher risk) and uses a method called 'three levels of assurance'. The first level of assurance is from management controls in our front-line operations which measure performance throughout the year. The second level of assurance consists of line management and oversight teams with specialist knowledge such as our finance, regulation and legal teams. The third level of assurance is provided through independent assurance which includes our internal audit function, the Yorkshire Forum for Water Customers and other external experts and auditors. This approach is best practice and is described in more detail later in this report (Section 5), in our Assurance Plan and in our Data Assurance Summary.

To satisfy ourselves that the information is accurate and accessible, all elements of the report are subject to an appropriate assurance process. In particular:

- Our assurance processes for annual reporting are certified to the British Standard ISO 9001 : 2015 Quality Management System. This is best practice and externally verified.
- The assurance process includes audit checks and challenges by Data Providers, Data Managers, Senior Managers and Directors. The assurance process also includes review and challenge by our financial auditor, Deloitte, and our technical auditor, Jacobs. We have reviewed and actioned all findings from these assurance processes.
- We have worked with the Yorkshire Forum for Water Customers, and listened to our customers at focus groups, to ensure we meet our ambitions for a document that is accessible for all customers and our assurance means that our published information is trusted.
- The outputs from the assurance processes have been reviewed and challenged by the Board Audit Committee.

The Board confirms that the APR sets out how the regulatory accounting statements have been completed in accordance with the Regulatory Accounting Guidelines.

So far as the Directors are aware, there is no relevant audit information of which the company's independent technical and financial auditors are unaware. The Directors have taken all the steps that they ought to have taken as Directors in order to make themselves aware of any relevant audit information and to establish that the company's independent auditors are aware of the information.

The Board of Yorkshire Water understands that it is accountable for the quality and transparency of the information provided within this report. The Board has read the report, reviewed the content and owns the information that is presented. The Board has obtained comfort from the Board Audit Committee that there are appropriate controls and assurance processes in place regarding the information contained within the report.

The Board Audit Committee reviewed the processes and approach to delivery of the Annual Performance Report on 26 March 2019 and then reviewed the completion of the process including receiving the assurance findings from the independent financial auditor and the independent technical auditor on 9 July 2019. At these meetings, appropriate enquiries were made on the executive team and the relevant experienced members of staff involved in delivering the Annual Performance Report. In between these meetings, the Board members were provided with draft versions of the developing report and have been able to review and provide comment.

At the Board meeting on 9 July 2019, following feedback from the Board Audit Committee that there are appropriate controls and assurance processes in place, regarding the information contained within the report, the Board approved the Annual Performance Report, including the wording of this Board Assurance Statement, and approved the release of the Annual Performance Report for publication. The Board authorised the Company Secretary to sign this Board Assurance Statement on behalf of the whole Board.



Kathy Smith
Company Secretary

Company performance and direction

The 5.4 million people who live in Yorkshire, and the millions of people who visit Yorkshire each year, rely on our services for their basic health and lifestyles. Approximately 140,000 businesses use the water we supply to provide goods and services that support the economy, not just of Yorkshire, but of the whole United Kingdom and beyond.

This statement shows how our board sets and reviews our ambitions and targets so that we deliver our goods and services for all our customers and stakeholders (those with an interest in our business) who depend on our services. Within this statement, we also provide information on the relationship between our financial performance, rewards for our executives and how we deliver our services.

This statement has the following sections.

- How we set our ambitions
- How we monitor performance and make decisions
- How we involve our customers and stakeholders
- How we change and update our commitments
- How we have performed in 2018/2019
- How we balance the relationship between financial performance, rewards for executives and delivering our services

As a water and waste-water company, we provide some of society's most essential services, and we help to protect the natural environment. Our vision is 'taking responsibility for the water environment for good', which includes our ambition to go beyond regulatory requirements and is based on doing what is right for customers, colleagues, partners, the environment and investors, both in the short and long term.

How we set our ambitions

The water industry works in five-year asset-management planning (AMP) periods. One of the main aspects of the regulatory framework that supports this five-year planning cycle is called the price review. The price-review process sets the prices we charge, investment we make and services we provide to customers in each AMP. We are currently in asset-management period 6 (AMP6), which covers the period from April 2015 to March 2020. We set the prices, investment and services that customers should receive in this period during our last price review in 2014 (PR14).

As part of PR14, we contacted over 30,000 of our customers as well as our stakeholders, our regulators and the Yorkshire Forum for Water Customers (the forum) to ask them what they wanted us to focus on as a priority. We used the feedback we received to define seven long-term themes, known as customer outcomes. These outcomes formed the core of our current five-year

plan. Once we had defined the outcomes, we worked with our customers to develop measures that support these outcomes. These are known as performance commitments, and are our promises to you. There are currently 26 performance commitments and we report on them in our annual performance report.

As well as delivering against these targets, we must keep to a range of legal obligations and broader duties to customers, the environment and other stakeholders. You can find more details of how we identify these requirements, and manage the risks of keeping to them, in our risk and compliance statement.

In August 2018, we published a new long-term strategy called #notjustwater, which you can find at: www.yorkshirewater.com/biggoals. Our strategy recognises how we need to meet the challenges that Yorkshire will face in the future. These include looking at how a growing population means that we need to make sure enough water is available and that we continue to take away and recycle waste water. The strategy identifies five 'big goals' that will shape everything we do in the future. Our five big goals are shown below.

- 1. Customers:** We will develop the deepest possible understanding of what our customers need and want, and make sure that we develop a personalised service to meet those needs.
- 2. Water supply:** We will always provide our customers with enough safe water. We will not waste water and we will always protect the environment.
- 3. Environment:** We will remove surface water from our sewers (surface water is rain water that drains from roads and from properties into the sewer) and recycle all waste water, protecting the environment from sewer flooding and pollution.
- 4. Transparency:** We will be a world leader in openness and transparency.
- 5. Bills:** We will use innovation to improve our services, get rid of waste and reduce costs and we will not waste money.

To develop our new strategy, we looked closely at the future economic, social and environmental issues that Yorkshire faces as a region. We spoke at length to our customers and stakeholders, talking to over 30,000 people to help make sure our plans match their expectations.

Our long-term strategy sets the background for our new business plan for the period from 2020 to 2025, known as asset-management period 7 (AMP7). The detailed plan sets out how we will maintain and improve water and waste-water services in Yorkshire to make sure they are

resilient and sustainable. Our business plan also sets out our new performance commitments that we have developed with our customers and stakeholders in line with our long-term strategy. These new commitments will come into force from April 2020, when the new AMP starts. Our AMP7 plan is an ambitious one which will stretch and challenge us. We will need to achieve significant savings and, at the same time, transform our organisation that focuses even more on our customers.

We sent our new price-review business plan (PR19) to our regulator, Ofwat, in September 2018 and they are now reviewing it. This should be completed by the end of 2019. You can find our plan at: www.yorkshirewater.com/ourbusinessplan.

How we monitor our performance and make decisions

Throughout 2018/2019, our board had seven scheduled meetings, with one extra non-planned meeting to consider matters related to PR19. The board also regularly meets during the year for workshops to consider specific matters in more detail. During the year, five of these workshops were held.

At each meeting, the board considers health and safety, financial performance and non-financial business performance, including past performance and expected future performance.

To make sure all board members have a full picture of our company, monthly reports on financial performance, our employees, governance, keeping to our standards and health and safety are sent to the board members. We do this whether or not a board meeting is scheduled.

The board aims to regularly meet both formally and informally with senior management across the business to gain further insight into the day-to-day operations and the main risks and opportunities facing each part of the business. Members of the Yorkshire Water Leadership Team and other key senior managers are regularly invited to go to meetings with the board to provide updates and give the non-executive board members regular direct access to the senior management team.

There is a schedule of matters reserved for the board which sets out the specific matters that must be referred to the board for approval. These include matters relating to the structure of the company, our policy on dealing with dividends (money paid to shareholders), significant issues to do with regulations and press releases, along with significant operational matters.

The board is in the process of setting up an employee forum so employees can speak to the board direct.

Decision-making will inevitably involve some trade-off to make sure we take a fair and reasoned approach to delivering our services. To help us with our decision-making, we are using the concept of the 'six capitals'. The six capitals are shown below.

- 1. Financial capital** – our financial health and efficiency
- 2. Manufactured capital** – our pipes, treatment works, offices and information technology (IT)
- 3. Natural capital** – the materials and services we rely on from the environment, for example water
- 4. Human capital** – our workforce's abilities and wellbeing
- 5. Intellectual capital** – our knowledge and processes
- 6. Social capital** – our relationships with our customers and stakeholders and our customers' trust in us

Companies traditionally tend to focus mainly on financial capital. Our decision-making is improved by considering the positive and negative effects and links between all of the six capitals. This means that our decisions have a balanced effect, which takes account of risk and value, so that we can look at long-term approaches.

As well as using the concept of the six capitals in our decision-making, we need to keep our long-term plans up to date. As a result, the board has put in place a PESTLE, which is a tool companies use to view, in different ways, the environment that a company is working in.

Humberstone Bank Farm is an example of a trade-off that the board has had to consider. When one of our long-standing agricultural tenants advised that they planned to retire from farming, the board had to decide on what to do with this land, including looking at the option to sell it. We decided that we should test out a 'Beyond Nature' approach. Yorkshire Water's 'Beyond Nature' vision will transform how farms in the future connect with the land, water and wildlife around them. Protecting water quality is still our main aim, but we recognised that the land also had the opportunity to generate significant value to society, our communities, customers and stakeholders. This supported our vision of taking responsibility for the water environment in the future. There are other examples too across the region where we decided to keep land and turn it into nature reserves rather than sell the land on.



PESTLE

An acronym for political, economic, social, technological, legal and environmental. We use it so our decisions consider all the different stakeholders involved.

How we involve our customers and stakeholders

We need to continue involving our customers and stakeholders to make sure our ambitions match our priorities. Understanding from our customers what matters most to them about the services we provide shapes both our immediate targets and our long-term plans.

We know that our customers' expectations are changing. We want our services to be flexible so that we can tailor them to match our customers' needs. For example, some people want to talk to us on the phone to report a problem, but other customers prefer to report and deal with problems online. No two customers are the same and the way customers want us to contact them, or ways to get in touch with us, varies greatly.

We are committed to continuing to involve our customers to make sure that we always understand their priorities and take account of them in our plans, now and in the future.

We regularly discuss our performance with the independent Yorkshire Forum for Water Customers (the forum). Our board Chairman, Anthony Rabin, meets with the Chair of the forum, Andrea Cook, twice a year. The board also met with the forum over the last year as part of the price-review process.

We know we need more focus on customer experience. We set up the customer-experience department, in February 2019. Given the ambitious plans of PR19, and our aim to continuously focus on our customers' needs and expectations, the new department is an important milestone in delivering our plans. It brings together a number of existing teams from across the organisation who have contact with customers. The purpose of the new customer experience department is to make sure we understand customer needs in the future and that we share best practice.

How we change and update our commitments

Although we set our regulatory performance commitments using a five-year cycle, our commitments continue to change.

As a result of feedback from our customers, the new long-term strategy and from reviewing our performance every month, we set a new aim to be in the top 25% of water companies in the next AMP for several priority areas of service. We announced this aim in December 2017. The following new commitments were made after wide-ranging consultation with our customers, and have been strongly supported by stakeholders, such as the forum. We are working to:

- reduce leaks by 40%;
- cut category-three pollution incidents by 40%;
- reduce sewer flooding by 70%; and
- reduce, as far as possible, the average interruption time for each property to two minutes.

We have also committed to a policy of being 'open by default' by 2020. This means we aim to release most of our information on our operations and services by 2020. We will start with releasing information on leaks and pollution incidents from the last five years. We will then involve the public and those people and organisations who use the information we provide to find out what they would like us to publish next. We are committing to a two-year programme of releasing information until we reach the 'open by default position'. We are the first in the water sector to commit to this. The only exceptions to the open data policy will be information which could identify individuals and information with security implications. By becoming 'open by default', we hope to give our customers the chance to assess the information we provide and hold us to account on our performance. We also hope that this may stimulate new ideas, by encouraging experts from outside our organisation to look at operational performance and identify new solutions to traditional industry issues.

As well as the ambitions we set ourselves during PR14 and PR19, our ambitions are also influenced by best practice throughout the world. The United Nations Development Programme (UNDP) has formally adopted a set of 17 sustainable development goals which are backed up by 169 targets. We have assessed where we can make the most substantial contribution to these goals by increasing the value we create for communities in Yorkshire and by reducing our carbon footprint. You can find out more about the SDGs at <https://sustainabledevelopment.un.org>. Our Annual Report and Financial Statements provide information on where we have made a notable contribution to these goals.

In April 2019, the water industry published five stretching goals called public interest commitments. The goals are:

- to speed up the rate of reducing leaks;
- to make sure water bills are affordable;
- for the sector to achieve net zero carbon emissions (balancing the amount of carbon produced with the carbon we remove or simply removing carbon emissions altogether);
- to prevent the equivalent of four billion plastic bottles ending up as waste; and
- to give 100% commitment to the social mobility pledge (Social mobility is the link between a person's occupation or income and the occupation or income of their parents. Where there is a strong link, there is a lower level of social mobility. Where there is a weak link, there is a higher level of social mobility.) The pledge is a campaign involving all political parties to improve social mobility in the United Kingdom and shows our commitment to accessing talent from all backgrounds.

All of these goals go beyond planned commitments within our current business plan. We actively helped the industry to shape these commitments and they work alongside our plans for AMP7 and beyond. We have already started to plan how we will contribute to the five national goals. Each one is being led by a member of the executive team

who will work with colleagues across the sector to develop and put those plans in place. We also plan to fully involve customers in developing our plans to meet the goals. You can find the public interest commitments at www.water.org.uk/wp-content/uploads/2019/04/Public-Interest-Commitment.pdf

How we have performed in 2018/2019

The annual performance report provides more information on our performance. We explain our latest performance, including where we have been successful in meeting or going beyond our performance commitments, and why some commitments have not yet been delivered.

We have met 21 out of 26 performance commitments this year. You can find more information on our performance against all 26 of our performance commitments later within the annual performance report. The five performance commitments where we have not met the target are shown below.

- Drinking-water compliance. We achieved a compliance of 99.96% against a target of 100%. Our performance in 2018/2019 is an improvement from the previous year.
- Drinking-water contacts. We achieved a slight reduction in the number of people who contacted us about their drinking water from 8,100 in 2017/2018 to 7,964 in 2018/2019. This is against a target of less than or equal to 6,108 people contacting us about the quality of their drinking water.
- Serious pollution incidents. We had 11 serious pollution incidents in 2018 compared with a target of no more than two.
- Energy generation. We generated, through renewable energy generation, 11.3% of the total amount of energy we used over the last year, which is below our target of 12% and slightly reduced compared with our performance of 11.4% in the previous year.
- Measure of customer service. Our target is to improve our performance year on year. We achieved a result of 84.0 points out of 100 compared with a target of 84.3 points out of 100.

We and the other water companies in England and Wales provide information to a central hub so you can compare how we are performing against each other and how the water industry compares with other sectors. Visit www.discoverwater.co.uk to find the latest information on water quality, environmental performance, customer service and water bills.

How we balance the relationship between financial performance, rewards for executives and delivering our services

We believe in the importance of being open about paying our directors and we try to make sure we pay our directors fairly in relation to their experience, their performance, the demands and complexity of their role and the experience our customers have. At the same time we also consider the pay and employment conditions of others in the organisation and those in the communities we serve.

We can break the pay packages for our executive directors into the following parts.

Fixed pay:

- Salary
- Benefits
- Pension

Variable pay:

- Annual bonus – this is designed to encourage directors to achieve in-year targets that link to a range of both short- and long-term business priorities.
- Long Term Incentive Plan (LTIP) – the LTIP is a rolling three-year plan based on achieving specific performance conditions focused on the long-term sustainability of the business.

Our pay structure is intended to be simple and transparent and to clearly link pay to performance. The pay of our executive directors is weighted towards variable pay, with the most they can earn being linked to achieving stretching performance targets based on measures chosen to promote our long-term success and an improved customer experience.

You can find full details of our directors' pay in our Directors' Remuneration Report, which is published in our Annual Report and Financial Statements.

We are in the process of carrying out a significant policy review, comparing our policy with best practice, organisations of a similar size and other organisations within our own sector. We are being helped in this review by remuneration consultants. The recommendations from this review will be presented back to the Remuneration Committee later in 2019. Any changes to the policy as a result of the review will apply from 1 April 2020 and will be reported in the Directors' Remuneration Report next year.

Statement approval

At the board meeting on 9 July 2019 the board approved this statement on our direction and performance. The board authorised the Company Secretary to sign this statement on behalf of the whole board.

Signed on behalf of the Board



Kathy Smith
Company Secretary

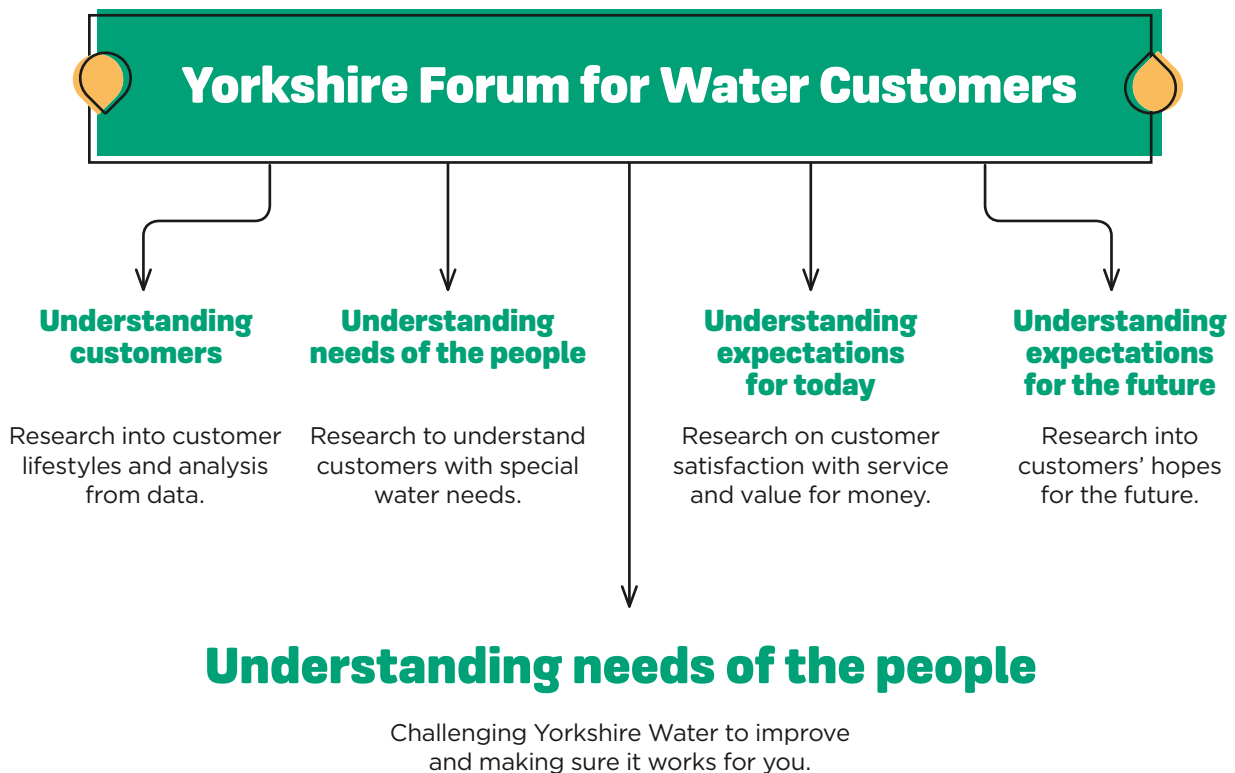
We have tested this Board statement on our company direction and performance with our customers on our online community and have shared this statement with the Yorkshire Forum for Water Customers. We have incorporated their feedback into this statement. We have also obtained the Plain English Crystal Mark for this statement.



Statement from the Yorkshire Forum for Water Customers

We regularly engage with the Yorkshire Forum for Water Customers (the Forum), which gives us valuable insight into what our customers want from us now and into the future. The Forum is an independent challenge group that is responsible for making sure our customers' views are fairly reflected in our business plan and ensuring we meet the performance commitments we have made to customers. You can read more about how we have engaged with the Forum in section 6 of this APR.

The Forum has published a statement on our performance. You can view the statement here: www.yorkshirewater.com/customerforum





Our commitments to customers

Our vision is 'taking responsibility for the water environment for good' and we recognise the responsibility we have in providing one of life's most essential services and protecting the natural environment. Our vision is about doing what's right for our customers, colleagues, partner organisations, the environment and our investors, both in the short and long term.

Over the next few pages we will go through where we provide our services and some of the things we do every day.

3. **Introduction to our performance**

In this section

01.

We start this section with information about the price of an average customer bill and how it compares to the industry average.

02.

We give an introduction on the promises we made to our customers, called the 'customer outcomes' and the performance commitments.

03.

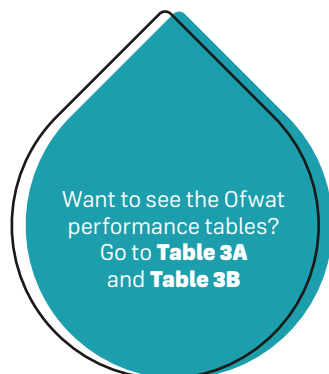
We explain the assurance we carry out on our performance commitments so that you can have trust and confidence that we are reporting accurately.

04.

Finally, we give an introduction to how we calculate the outcome delivery incentives (ODIs).

Links to more information

We have provided more information on our performance than ever before. Click on the links to below to view our other publications and webpages on our performance.

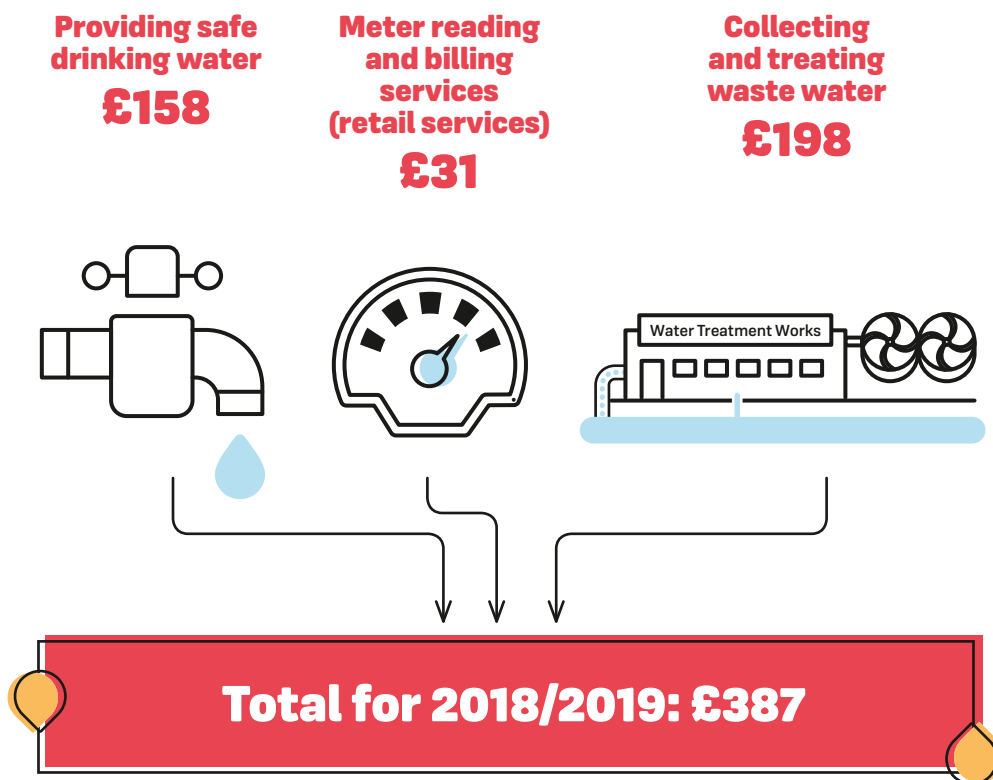


Customer bills

During 2015 to 2020 the average bill will not increase by any more than the rate of inflation.

When we developed our five-year plan for 2015-2020, we involved customers every step of the way and asked customers to choose the level of investment that was right for them. Overall, customers told us that they wanted us to keep bills fair and affordable. We've worked hard to keep bills low while still delivering the service customers expect. So, by the end of the five-year period, in 2020, bills will have reduced by 2.5% in real terms (i.e. increased by less than the rate of inflation).

Our average annual household combined water and waste water bill for 2018/2019 was £387 (compared to a forecast of £385) and for 2019/2020 is forecast to be £401.



Additional information:
Our forecast average annual household combined water and waste water bill is £22 less than the water industry average.

Retail
Retail services are customer-facing activities such as billing, account handling (payments, debt management, meter reading), customer queries, as well as water-efficiency advice and tackling leaks on customers' pipes.

How does the bill compare?

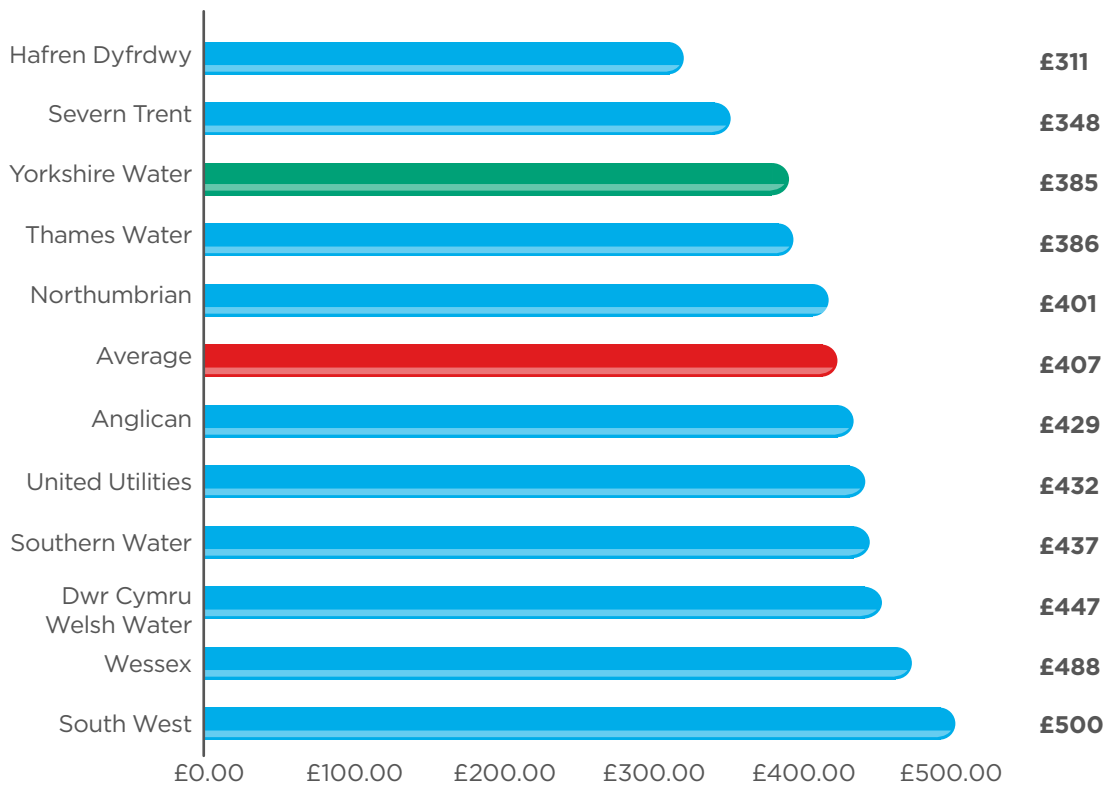
The following charts show how the forecast average bill for water and waste water services in Yorkshire compares with the UK average and other water companies. We have been cheaper than the UK average for over a decade and we have the third cheapest combined water bill this year. (Source: Discover Water). Visit the Discover Water website for more information.

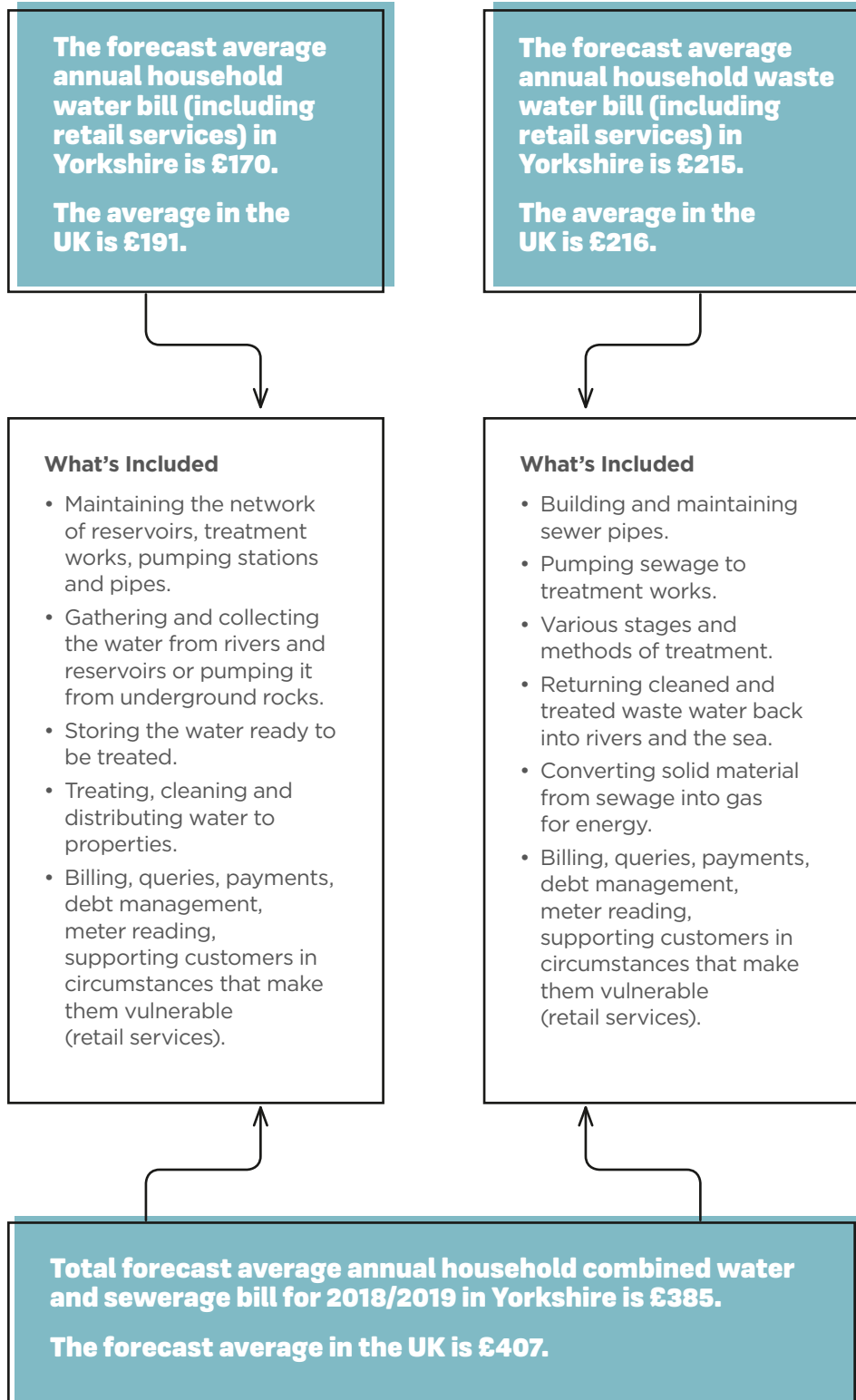
www.discoverwater.co.uk/annual-bill



Forecast average bill for water and waste water services in Yorkshire compared with the UK average.
Source: Water UK.

2018/2019 – Forecast annual water and waste water services bills for all water companies












What are the customer outcomes and performance commitments?

In 2014, we contacted over 30,000 customers, our regulators and the Yorkshire Forum for Water Customers (the Forum) to ask them what they wanted us to focus on. We used your feedback to define seven key long-term themes, known as customer outcomes, which have formed the basis of our five-year plan, known as our AMP6 2015-2020 business plan. We think it's vital for us to be able to measure and understand whether we're achieving these outcomes in the near and long-term future. So, we've worked with you to identify the right measures of success for each outcome. We've tried to identify measures that meet your needs and the needs of regulators and other stakeholders. So, for each outcome there are several measures, known as performance commitments, and there are 26 of them.

These commitments are our promises to you and we want to make sure you can clearly see how we are performing against them. Our regulator, Ofwat, and the Forum will hold us to account for our performance against these commitments. The diagram below shows our seven customer outcomes and performance commitments.

These are our customer outcomes

						
We provide you with water that is clean and safe to drink	We make sure that you always have enough water	We take care of your waste water and protect you and the environment from sewer flooding	We protect and improve the water environment	We understand our impact on the wider environment and act responsibly	We provide the level of customer service you expect and value	We keep your bills as low as possible

These are our performance commitments

Drinking water quality compliance	Leakage	Internal flooding	Length of river improved	Energy generation	Quality of customer service (SIM)	Number of people who we help to pay their bill
Corrective actions	Water use	External flooding	Visitor satisfaction		Waste diverted from landfill	Service commitment failures
Drinking water quality contacts	Water supply interruptions	Pollution incidents	Working with others	Stability and reliability factor - Waste water quality		Overall customer satisfaction
Stability and reliability factor - Water quality	Stability and reliability factor - Water network	Stability and reliability factor - Waste water network	Bathing water quality			
			Land conserved and enhanced			

 These performance commitments have an outperformance, or an underperformance payment attached to them



What does outperformance and underperformance mean?

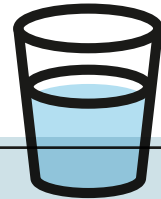
To make sure we deliver against the performance commitments, we have developed a number of rewards (outperformance) and penalties (underperformance) in consultation with our customers. For example, if we fail to deliver on our promises, this could affect our reputation, customers could view us negatively and we may have to pay a financial penalty. We explain this in more detail later in this section.

The performance commitments in more detail

We provide you with water that is clean and safe to drink

There are four performance commitments under this outcome

- Drinking water quality compliance.
- Corrective actions.
- Drinking water quality contacts.
- Stability and reliability factor - Water quality.



You told us you need a continuous supply of clean, safe water for drinking and business use

Corrective actions

Any significant incident where the Drinking Water Inspectorate (DWI) has required us to take corrective action to maintain compliance or protect public health. Essentially, this refers to the number of times that the DWI feels that we haven't dealt with a situation appropriately when we've had to notify customers that the quality of our water is not up to acceptable standards.

This is a calendar year measure.

Drinking water quality contacts

The number of times that customers contact us each year because of taste, odour or discolouration issues with our water, and perceived illness as a result of drinking our water.

This is a financial year measure.

Drinking water quality compliance

This measures the quality of our water at the customers' taps. We take water samples based on the DWI sampling programme, and the results are used to determine the percentage of samples that are at or above pre-defined standards.

This is a calendar year measure.

Stability and reliability factor - Water quality

An overall assessment of the long-term stability and reliability for water quality. It's based on a series of measures which include non-compliance of our water treatment works sites and reservoirs due to coliform bacteria, turbidity and the number of reactive equipment failures.



Calendar year

The year starting from January 1st to December 31st.

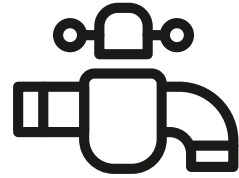
Financial year

The year starting from April 1st to March 31st.

We make sure that you always have enough water

There are four performance commitments under this outcome

- Leakage
- Water use
- Water supply interruptions
- Stability and reliability factor - Water network



You told us you need a continuous supply of clean, safe water for drinking and business use

Leakage

The total amount of water lost, in distribution and through supply pipes. This includes any losses between the treatment works and the customer's stop tap but doesn't include internal plumbing losses.

This is a financial year measure.

Water use

The average daily water consumption per person of population in a dry year. This is only for household consumption.

This is a financial year measure.

Water supply interruptions

The number of minutes lost per property served due to supply interruptions of three hours or longer (irrespective of whether it's planned, unplanned or caused by a third party).

This is a financial year measure.

Stability and reliability factor - Water network

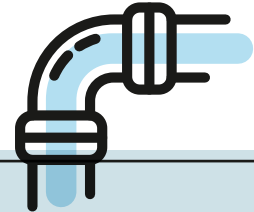
An overall assessment of the long-term stability and reliability for the water networks. It's based on a series of measures which include burst mains, supply interruptions of more than 12 hours, low water pressure, customer contacts for discolouration and reactive equipment failures.

This is a calendar year measure.

We take care of your waste water and protect you and the environment from sewer flooding

There are four performance commitments under this outcome

- Internal flooding
- External flooding
- Pollution incidents
- Stability and reliability factor - waste water network



You want us to remove your waste water and maintain the sewer network

Internal flooding

The total number of incidents of internal sewer flooding of homes and businesses during the year.

This is a financial year measure.

External flooding

The total number of incidents of areas affected by external flooding during the year.

This is a financial year measure.

Pollution incidents

The total number of pollution incidents caused by our waste water assets which have been classified as having a minor or serious effect.

This is a calendar year measure.

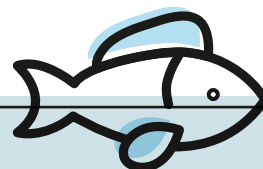
Stability and reliability factor - waste water network

An overall assessment of the long-term stability and reliability for the waste water networks. It's based on a series of measures which include sewer collapses, sewer blockages, properties flooded due to overloaded sewers and other causes, certain types of pollution incidents and reactive equipment failures.

We protect and improve the water environment

There are six performance commitments under this outcome

- Length of river improved
- Visitor satisfaction
- Working with others
- Bathing water quality
- Land conserved and enhanced
- Stability and reliability factor - waste water quality



You want us to remove your waste water and maintain the sewer network

Length of river improved

The length of river (kilometres) in the Yorkshire Water region improved through our investments during 2015-2020.

Visitor satisfaction

An assessment of customers' satisfaction with our current facilities, access and use of recreational sites, for example, walks around our reservoirs.

Working with others

The number of solutions we deliver through working with multi-agencies, organisations or individuals.

Bathing water quality

The number of Yorkshire's bathing waters (for example, beaches) where the requirements of the EU Bathing Water Directive are exceeded based on bathing water samples taken at designated beaches.

Land conserved and enhanced

The amount of land (hectares) that we conserve and enhance. This includes land within the region and includes both Yorkshire Water and non-Yorkshire Water land.

Stability and reliability factor - waste water quality

An overall assessment of the long-term stability and reliability for waste water quality. It's based on a series of measures which includes the number of waste water treatment works failing to meet compliance and reactive equipment failures.

We understand our impact on the wider environment and act responsibly

There are two performance commitments under this outcome

- Energy generation
- Waste diverted from landfill



You want us to take very good care of the environment

Energy generation

The amount of energy (electricity) Yorkshire Water generates through renewable technology expressed as a % of total energy consumption.

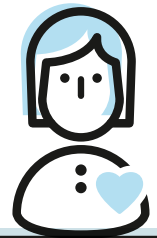
Waste diverted from landfill

The amount of waste from all Yorkshire Water activities (office, operational or construction) that's recycled or re-used as a % of total waste produced.

We provide the level of customer service you expect and value

There are three performance commitments under this outcome

- Quality of customer service (SIM)
- Service commitment failures
- Overall customer satisfaction



You want good customer service and acceptable prices

Quality of customer service (SIM)

The Ofwat qualitative measure of customer service satisfaction called Service Incentive Mechanism (SIM).

Service commitment failures

The total number of Guaranteed Standards of Service (GSS) events.

Overall customer satisfaction

The reported value (%) for overall customer satisfaction determined by the annual Consumer Council for Water tracking survey.



What's Guaranteed Standards of Service (GSS)?

All customers of water and sewerage companies are entitled to guaranteed minimum standards of service, as laid down by the Government. These rights are known as the guaranteed standards scheme (GSS). Where a company fails to meet any of these standards of service then it is required to make a specified payment to the affected customer.

We keep your bills as low as possible

There are three performance commitments under this outcome

- Number of people who we help to pay their bill
- Bad debt
- Value for money



You want us to take very good care of the environment

Number of people who we help to pay their bill

The number of customers who are assisted to pay their bill. This includes, but isn't limited to: Water Sure, Resolve and the Community Trust, plus customers who take up a water meter as a result of targeted advice following identification of an affordability issue.

Value for money

The reported % for value for money as determined by the annual Consumer Council for Water tracking survey.

Bad debt

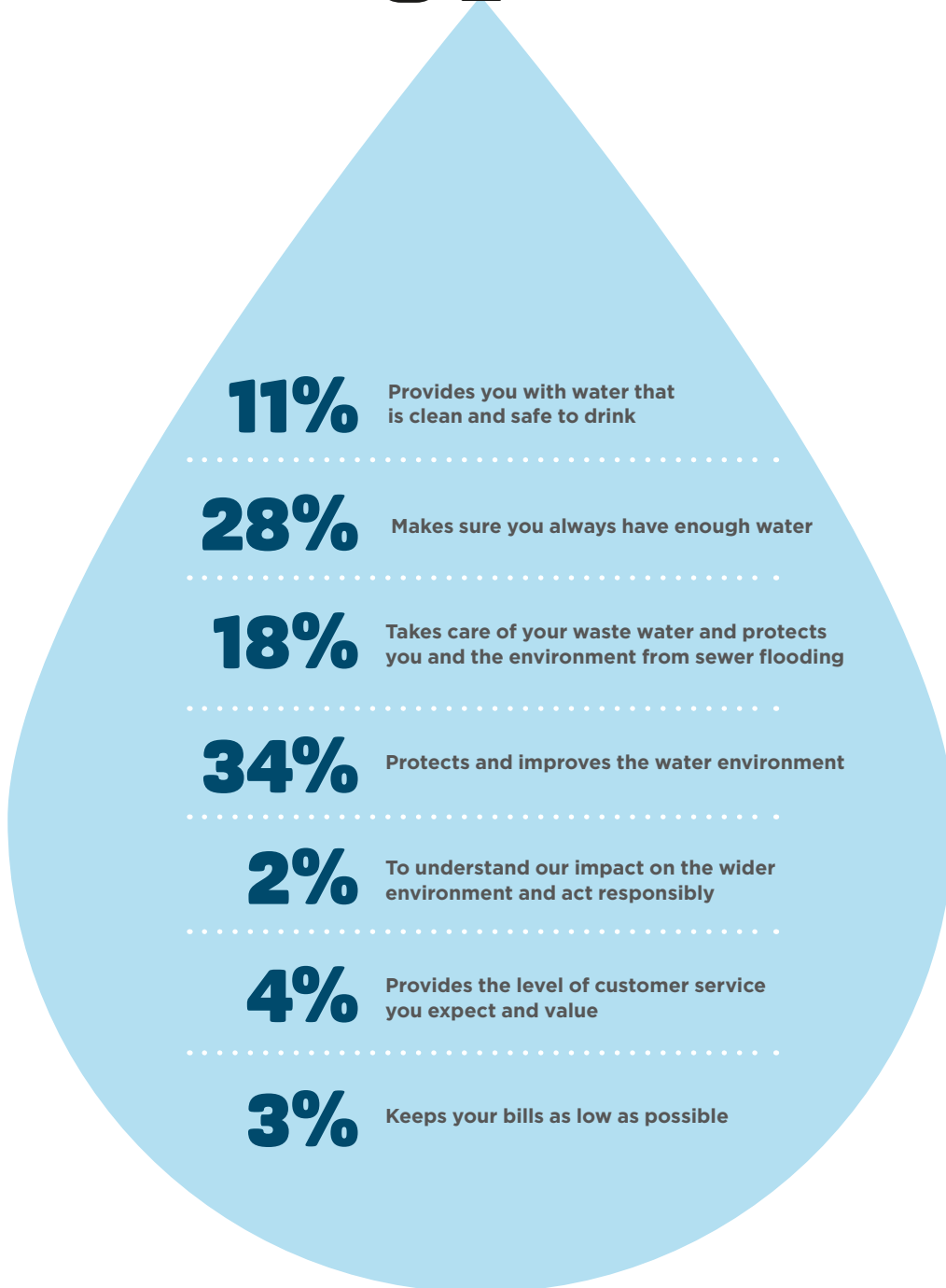
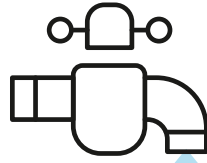
The cost to bill paying customers to cover the cost of interest on revenue that's not collected, debt written off and debt management costs, expressed as a % of the average annual bill.



Who is the Consumer Council for Water?

The Consumer Council for Water support thousands of customers with free advice and support on every aspect of their water and sewerage services.

This diagram shows how we spend your yearly water and waste water bill on the customer outcomes



Assuring our performance

Like all of the information we publish, our performance information has been checked by our three levels of assurance described in Section 5 of this report. We want to make sure you can trust and have confidence in the information we publish.

The results of our performance are presented to the Forum.

Our technical assurance providers, Jacobs, attended a Forum meeting to present their views on our performance. The Forum then challenged us on our performance and how we are delivering against our commitments.

Here is a link to the statement from the Forum reflecting on our performance:

www.yorkshirewater.com/customerforum

You can view the independent assurance statement from Jacobs in Appendix 2 of this report.

Comparing our performance

All water companies have their own set of performance commitments which have been individually developed to meet the needs and concerns of each company's customers. This can make it difficult to compare performance across different water companies, even similar sounding performance commitments can have different definitions.

In recognition of this, Discover Water (www.discoverwater.co.uk) was launched in 2016 to bring key water company information together in one place for customers.

The dashboard provided by Discover Water is a clear and simple source for trustworthy and factual information including how companies are performing against each other in key areas.

Ofwat publish a 'Monitoring financial resilience' document each year using the information published by water companies in their Annual Performance Reports.

This report compares the financial resilience and performance of the water sector. Click here www.ofwat.gov.uk/publication/monitoring-financial-resilience-2017-18/ to view the report from 2019.

For a number of our performance commitments we can compare our performance against that of other water companies. See how we're performing relative to other water companies in section 4 of this APR. We've shown comparisons for the following performance commitments:

- Drinking water quality compliance.
- Drinking water quality contacts.
- Water use.
- Water supply interruptions.
- Leakage.
- Measure of customer service.



Outperformance and underperformance

To make sure that we deliver the performance commitments, there are penalties when we fail to deliver for you which we will refer to as ‘underperformance’, and rewards if we are able to deliver more which we will refer to as ‘outperformance’. We have designed these incentives to reward performance that beats a particular target and to penalise us if our performance falls short. We believe it’s important that we focus on delivering these outcomes. As a result, the penalties for underperformance are always greater than the rewards we could earn for outperformance. Not all of our performance commitments have financial incentives, some have only reputational incentives based on how we perform against a target that reflects customers’ views of us.

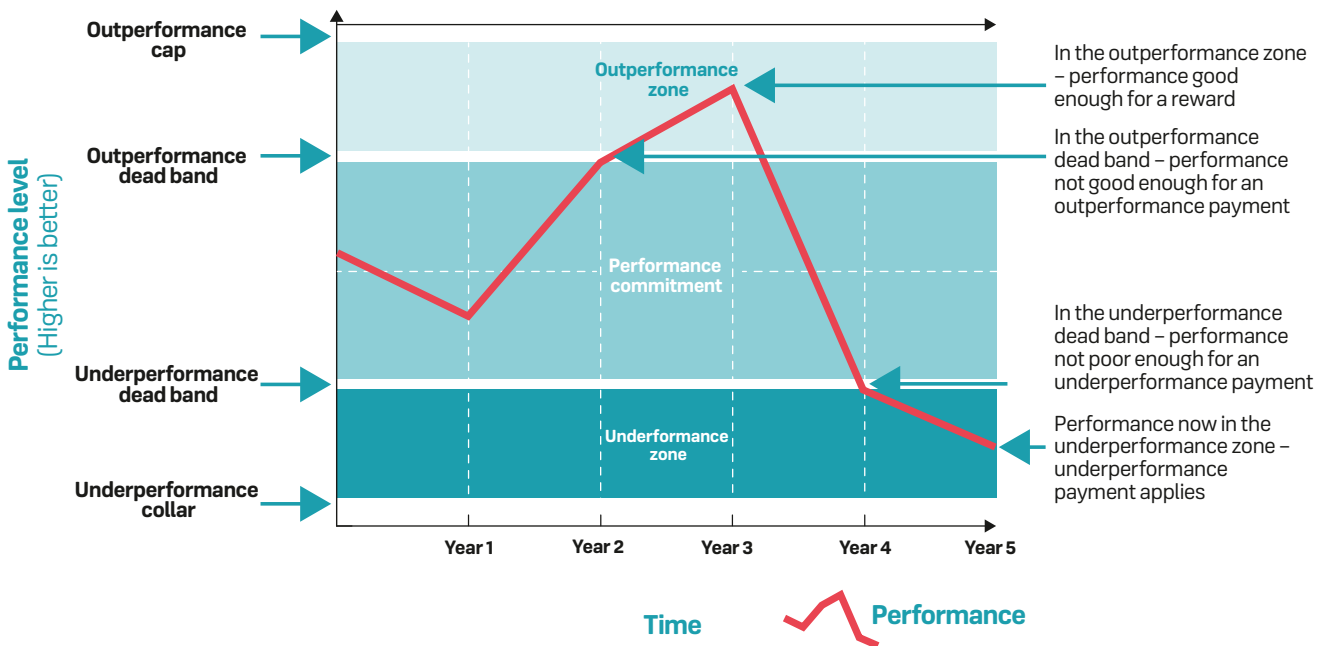
Although performance commitments with a reputational incentive don’t offer a reward or penalty, poor or good performance can affect how we are seen as a company, making them just as important.

So, how does it work?

For performance commitments which have a financial incentive, if we outperform (beat the target), we can earn a financial reward (where the performance moves into the outperformance zone as shown on the diagram below) or receive a financial penalty if we underperform (where the performance moves into the underperformance zone).

There is an outperformance cap, which is the maximum outperformance we can achieve in any given year for each performance commitment, and an equivalent limit on underperformance, called a ‘collar’, which is the most we can be penalised.

There is also an outperformance and underperformance ‘dead band’. This acts as a buffer between the target and the outperformance and underperformance zones. This is so that we aren’t immediately rewarded or penalised for small moves away from the target, which in some cases can be caused by natural factors, such as the weather.



How do we calculate the outcome delivery incentives?

We explained earlier how some of our performance commitments carry a financial reward or penalty, also known as outcome delivery incentives or 'ODI'. Here, we will explain through flow diagrams how they are calculated.

We have three forms of financial ODI; two sided (outperformance and underperformance), one sided (outperformance only) and one sided (underperformance only).

Performance commitments with two sided incentives – outperformance and underperformance

- Drinking water quality contacts
- Leakage
- Water supply interruptions
- Internal flooding
- Pollution Incidents (Category 3 Only)
- Length of river improved
- Land conserved and enhanced
- Quality of customer service (SIM)

Performance commitments with one sided incentive – underperformance only

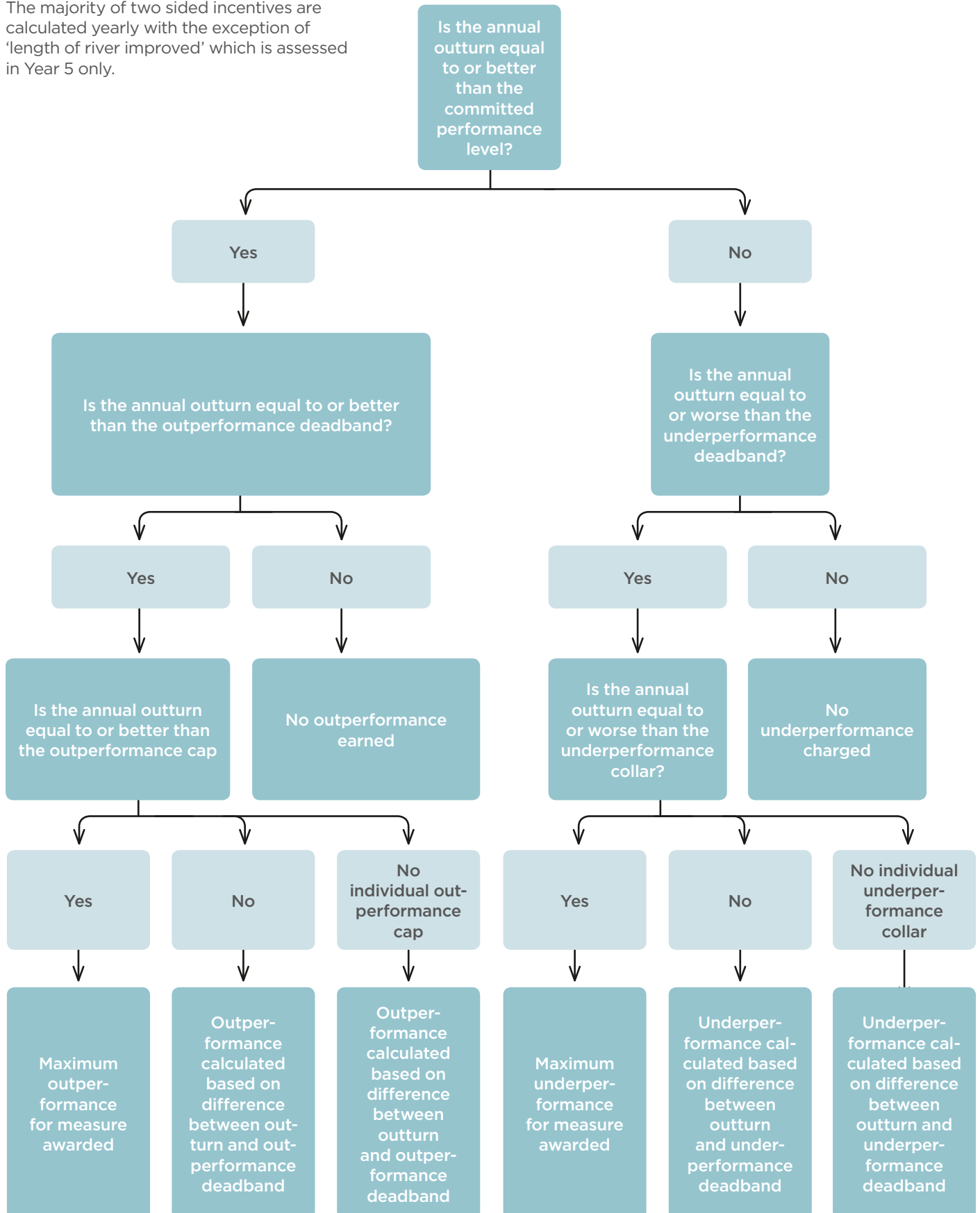
- Drinking water quality compliance
- Stability and reliability factor - water quality
- Stability and reliability factor - water network
- Stability and reliability factor - waste water network
- Stability and reliability factor - waste water quality

Performance commitments with one sided incentive – outperformance only

- Working with others

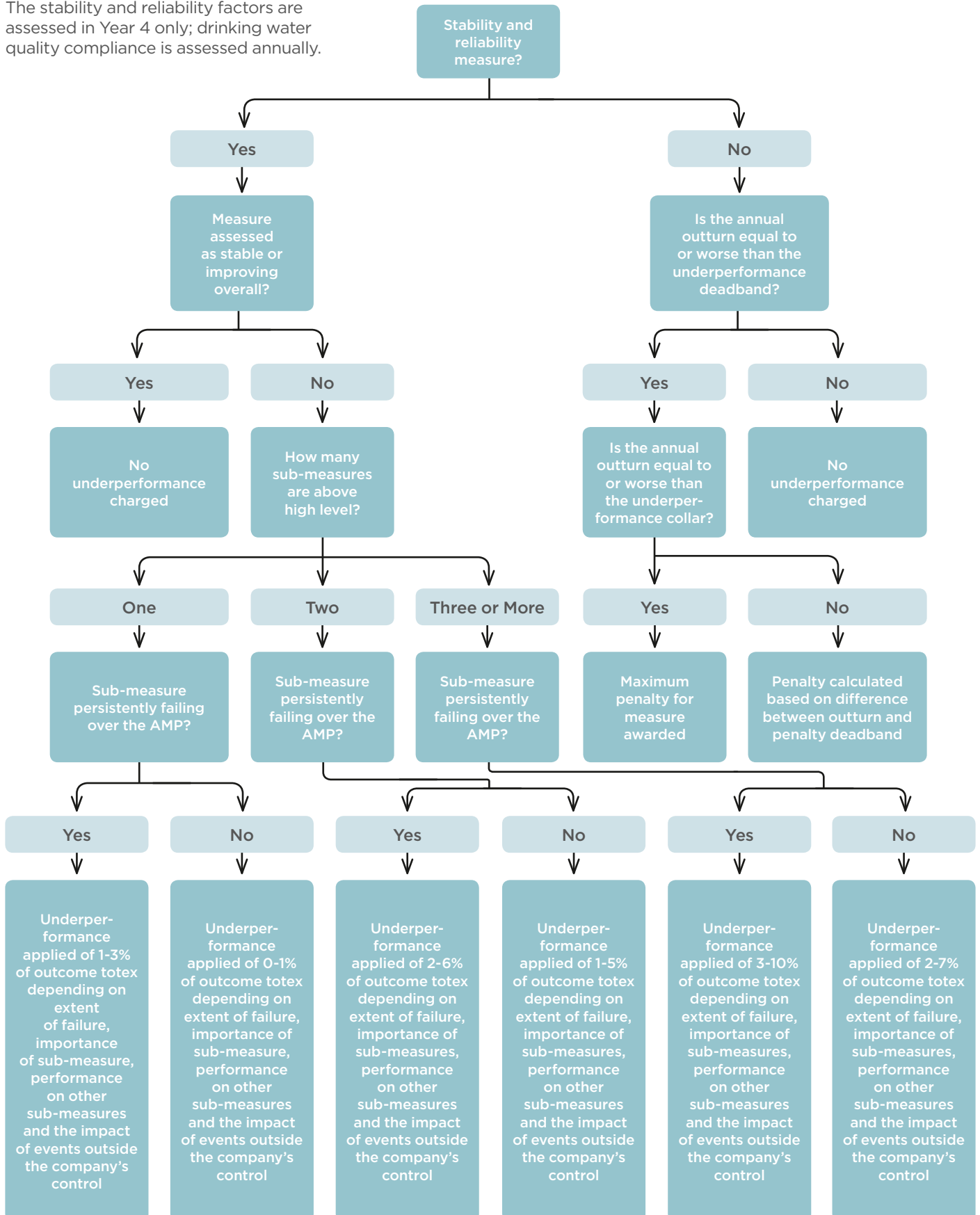
Two-sided incentives calculation methodology – outperformance and underperformance

The majority of two sided incentives are calculated yearly with the exception of 'length of river improved' which is assessed in Year 5 only.



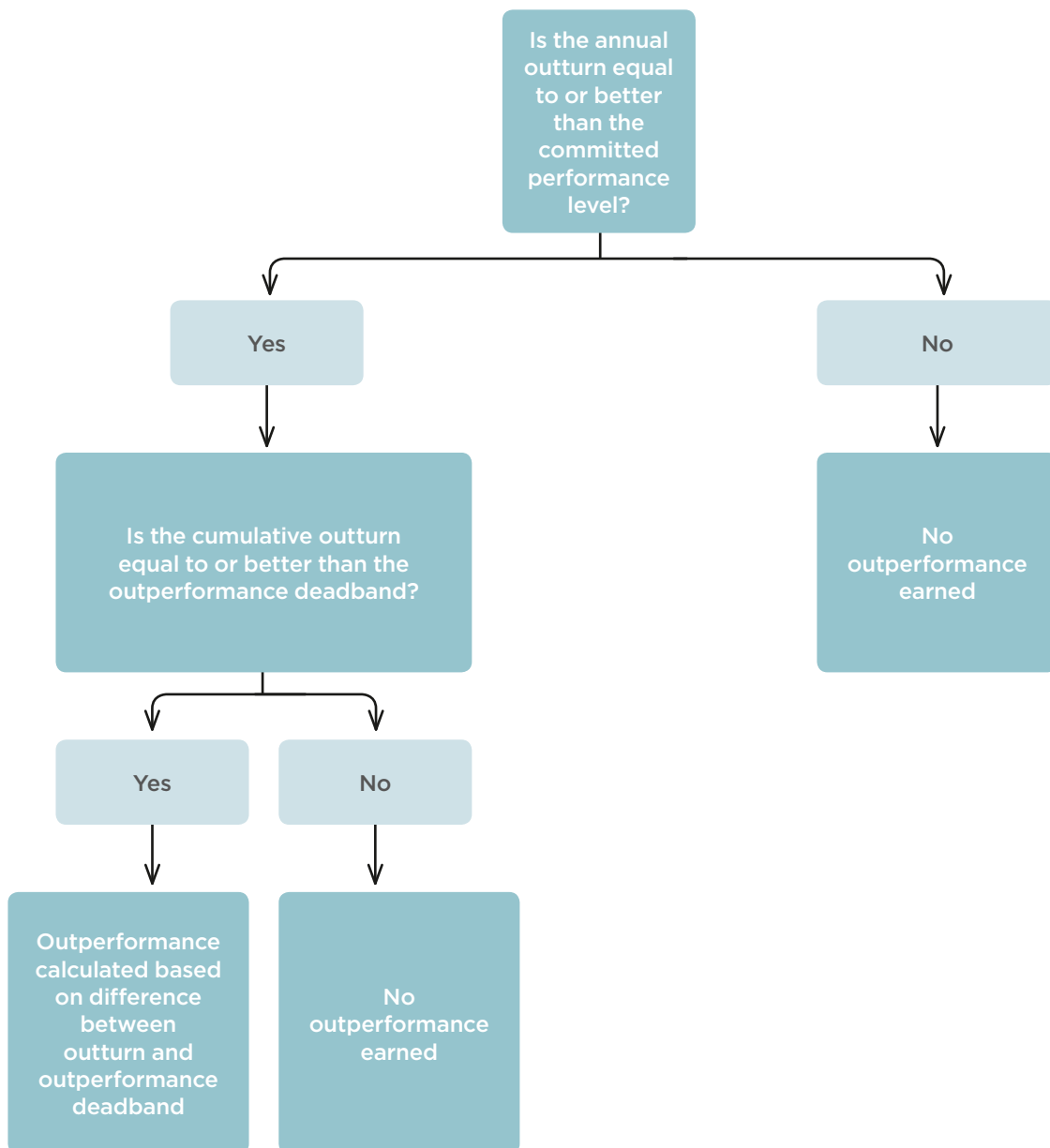
One sided incentive – underperformance only calculation methodology

The stability and reliability factors are assessed in Year 4 only; drinking water quality compliance is assessed annually.



One sided incentive – outperformance only calculation methodology

This is calculated annually.



4.

Review of our performance

In this section

01.

We start this section 4 with a summary of how we have performed in 2018/2019 and a summary of our performance in this 5-year period 2015-2020

02.

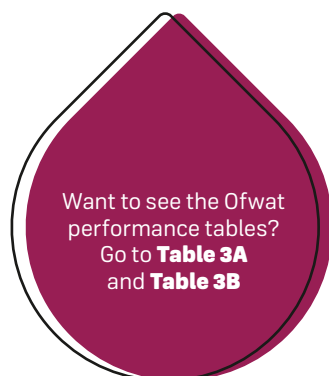
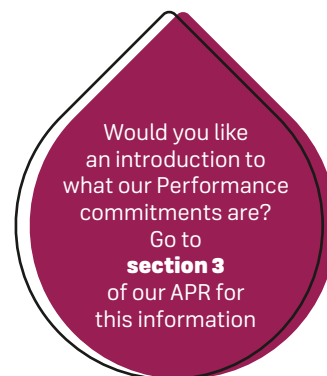
We give a detailed position on our financial outperformance and underperformance

03.

Finally, we provide a detailed summary of how we are progressing with each of our 26 performance commitments. We include information on our performance for the last 4 years and graphs comparing us to other water companies

Links to more information

We have provided more information on our performance than ever before. Click on the links to below to view our other publications and webpages on our performance.



Performance highlights



Average bills second lowest in the country, increased by less than inflation

(2017/2018: £373)



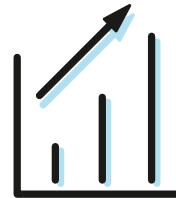
Operating profit **£263.9m**

(2017/2018: £281.1m) Reported in Table 1A Line 4 in the Annual Performance Report



Total tax contribution **£131.5m**

(2017/2018: £119.9m)



76 POINTS OUT OF **100**

(2017/2018: 77)



Continuing to meet and exceed our Performance Commitments **21 of 26**

(2017/2018: 22 out of 26)

Continued reduction in operational emissions, to lowest recorded levels

258 KT CO₂e*



(2017/2018: 288 KT CO₂e)



Finance for the Future **Award winner** for embedding an integrated approach



First in the water sector to publish **ethnicity pay gap report**

*KT CO₂e - Kilotones of carbon dioxide equivalent

A summary of our performance this year

We have delivered 21 out of 26 performance commitments this year. The five performance commitments where our performance has not quite met the target are shown below.

- Drinking-water compliance performance commitment (this is the quality of your drinking water measured against national standards). We achieved 99.962% compliance against a target of 100%. Our performance in 2018/2019 is an improvement from the previous year.
- Drinking-water contacts. We achieved a slight reduction in the number of people contacting us about their drinking water from 8,100 in 2017/2018 to 7,964 in 2018/2019. This is against a target of less than or equal to 6,108.
- Serious pollution incidents. We had 11 serious pollution incidents in 2018 compared with a target of no more than two.
- Energy generation. We supplied 11.3% of our needs through self-generated energy, which is below our target of 12% and slightly reduced compared with our performance in the previous year of 11.4%.
- Measure of customer service. Our target is to improve our performance year on year. We achieved a result of 84.0 points out of 100 compared with a target of 84.3 points out of 100.

We are pleased to report that we met the regulatory target for leakage this year. This was a measure we narrowly missed in the previous year.

On their own, our performance numbers do not really reveal either the operational challenges we have faced in the course of the year or indeed the significant achievement of our colleagues in maintaining and improving the service to our customers through a period of prolonged dry weather.

Looking behind the achievement of our leakage target tells a very challenging story. For six months of the year, from May through to October, we were dealing with over 2,000 water-main repairs every month. In the same period of the previous year, repairs rarely came to more than 500 a month. Mains bursts would normally be expected to peak in the winter months and then reduce once warmer weather appears in the spring. However, in 2018, there was a sharp increase in bursts towards the end of the winter caused by the 'Beast from the East' and this continued throughout the summer until late autumn. The freeze and thaw in March and April was followed by a record level of reduction in soil moisture from May onwards. This caused ground movement and, as a result, fractured water mains.

In late 2017 we took a decision to invest in long-term leakage reduction with a target of a 40% reduction by 2025. This investment meant that we were able to double the level of resources put into finding and fixing leaks. As a result, for the six-month period when bursts were at their peak, we had more than 300 leakage-detection vehicles operating, whereas in previous years there would have been around 150.

This extra resource has been critical in meeting our leakage performance target and also means that we start the next performance year at a historically low level of leaks for the time of year.

As well as the challenge on leakage performance, the weather patterns of 2018 also placed significant demands on how we manage water resources. Prolonged dry weather from June onwards saw customer demand for water increase by almost 20%, resulting in rapid water loss (depletion) from our reservoirs as a result of very little rain to refill them. Depletion rates of up to 7% a week of water made it essential that we managed water resources carefully.

The skill of colleagues in the business meant that we were able to make the most of treated water production to meet the demand. We were also able to make full use of our grid system to move water from areas with larger stocks to those under more pressure.

Dry weather continued until the late autumn when sustained rainfall meant that reservoir and groundwater levels soon improved meaning that we enter 2019/2020 in a relatively strong position.

However, it is clear that the effects of climate change are real and managing our operations as a result of longer-term climate change will be a real priority for us.

The Environment Agency (EA) annually completes an Environmental Performance Assessment of the water companies in England, examining performance on a range of environmental compliance matters such as pollution incidents and waste water treatment works compliance. The EA has classified our 2018 calendar year performance as 'Requires Improvement' with two out of a maximum four stars in their rating system. Our performance in the EA's assessment has reduced on last year, predominantly driven by an increase in serious pollution incidents.

How did we perform against our performance commitments?

We achieved 21 out of 26 performance commitments this year. The table below summarises the target and actual performance for each performance commitment.

Customer Outcome	Performance Commitment	Unit	2015/2016 Performance Achieved	2016/2017 Performance Achieved
We provide you with water that is clean and safe to drink	Drinking water quality compliance	%	99.954%	99.962%
	Corrective actions	Number	5	3
	Drinking water quality contacts	Number	10,007	9,093
	Stability and reliability factor - Water quality	Classification	Stable	Stable
We make sure that you always have enough water	Leakage	Megalitres per day	285.1	295.2
	Water use	Litres per household per day	141.7	137.4
	Water supply interruptions	Minutes	12:53 (mins:secs)	9:47 (mins:secs)
	Stability and reliability factor - Water network	Classification	Stable	Stable
We take care of your waste-water and protect you and the environment from sewer flooding	Internal flooding	Number	1,842	1,769
	External flooding	Number	9,037	9,145
	Pollution Incidents (Cat 1 & 2)	Number (Cat 1 & 2)	5	4
	Pollution Incidents (Cat 3 Only)	Number (Cat 3)	180	207
	Stability and reliability factor - waste water network	Classification	Stable	Stable
We protect and improve the water environment	Bathing water quality	Number	18	17
	Working with others	Number	4	5
	Visitor satisfaction	Survey	Survey published 98%	Survey published 97%
	Land conserved and enhanced	Ha.	11,466	11,492
	Length of river improved	km	Programme commenced	Programme continues
	Stability and reliability factor - waste water quality	Classification	Stable	Stable
We understand our impact on the wider environment and act responsibly	Waste diverted from landfill	%	98.9%	99.3%
	Energy generation	%	11.3%	10.4%
We provide the level of customer service you expect and value	Quality of customer service (SIM)	Score out of 100	82.6	83.4
	Overall customer satisfaction	%	95% (Water), 92% (Waste Water)	93% (Water), 91% (Waste Water)
	Service commitment failures	Number	10,567	10,356
We keep your bills as low as possible	Number of people we help to pay their bill	Number	22,735	26,902
	Bad debt	%	3.05%	2.94%
	Value for money	%	82% (Water), 83% (Waste water)	79% (Water), 82% (Waste water)
Summary			24 out of 26 performance commitments met	24 out of 26 performance commitments met



Performance commitment target met



Performance commitment target failed

2017/2018 Performance Achieved	2018/2019 Performance Achieved	2018/2019 target	Impact/position in 2018/2019	Reward/ Penalty Value for 2018/2019
99.953%	99.962%	100%	Penalty Deadband	£0
4	5	Less than or equal to 6	Reputational	-
8,100	7,964	Less than or equal to 6,108	Penalty	-£6.125M
Stable	Stable	Stable	Assessed in Year 5	-
300.3	289.8	Less than or equal to 292.1 MI/d	Reward deadband	£0
135.9	133.5	Less than or equal to 139.3 l/h/d	Reputational	-
6.58 (mins:secs)	10.28 (mins:secs)	Less than or equal to 12 minutes	Reward	£4.018M
Stable	Stable	Stable	Assessed in Year 5	-
1,682	1,692	Less than or equal to 1,919	Reward	£6.670M
9,296	9,116	Less than or equal to 10,487	Reputational	-
3	11	Less than or equal to 2	Reputational	-
202	188	Less than or equal to 211	Reward	£4.528M
Stable	Stable	Stable	Assessed in Year 5	-
18	17	More than or equal to 15	Reputational	£0
12	11	More than or equal to 3	Reward	£0.016M
Survey published 96%	Survey published 99%	Survey and publish annually	Reputational	-
11,479	11,524	11,736 hectares by 2020	Assessed in Year 5	-
Programme continues	Programme continues	More than or equal to 440km by 2020	Assessed in Year 5	-
Stable	Stable	Stable	Assessed in Year 5	-
99.4%	99.6%	More than or equal to 95%	Reputational	-
11.4%	11.3%	More than or equal to 12%	Reputational	-
84.3	84.0	84.3 (year on year improvement)	Reputational	-
94% (Water), 89% (Waste Water)	95% (Water), 88% (Waste Water)	To improve 2015-2020 performance on average compared to 2010-2015	Reputational	-
12,203	14,221	Average of 2015-2020 performance to be less than the average of the last 3 years of 2010-2015	Assessed in Year 5	-
28,853	31,606	Publish annually	Reputational	-
3.10%	3.02%	Less than or equal to 3.16%	Reputational	-
76% (Water), 79% (Waste water)	77% (Water), 79% (Waste water)	To improve 2015-2020 performance on average compared to 2010-2015	Assessed in Year 5	-
22 out of 26 performance commitments met	21 out of 26 performance commitments met			

Financial outperformance and outcomes

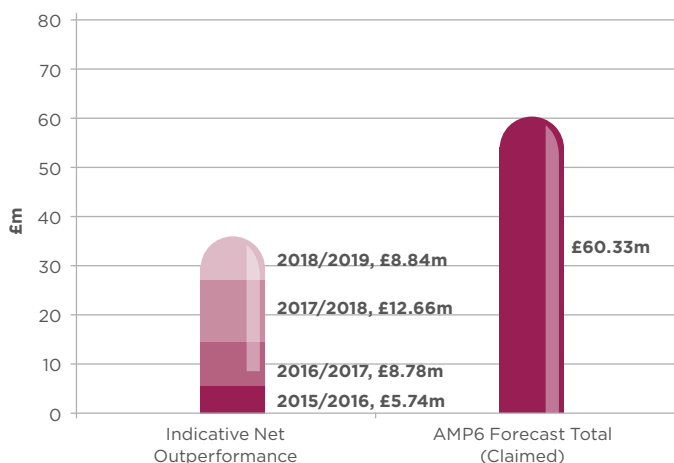
Outperformance

In 2014 Ofwat allowed a level of total expenditure (totex), to deliver the performance commitments for customers. We seek to beat those allowed costs as this produces short term savings for the company and long-term savings for customers through Ofwat's incentive sharing mechanisms.

We are also incentivised, through the Outcome Delivery Incentives (ODI), to outperform on the service we deliver, by bettering the performance commitments agreed with customers. As described previously we are financially rewarded when we beat the performance commitment and are penalised when we fall short. This year we have assessed our performance to the end of 2018/2019 and forecast it to the end of the current price control period, 2019/2020.

Forecast ODI underperformance/ outperformance position

Overall the programme of delivering our commitments remains positive in delivering improved service levels for customers. The chart below illustrates the forecast balance of ODI outperformance and underperformance up to the end of 2019/2020. Overall, we forecast a net outperformance of £60.33m. Customers are currently not asked to pay for the outperformance; they will be incorporated into the next review of prices for the period 2020-2025.



In the current year (2018/2019) we earned an indicative net outperformance of £8.84m. This is made up of good all-round delivery of the performance commitments, with outperformance and underperformance occurring as follows:

- £4.26m outperformance for Category 3 Pollution Incidents
- £4.02m outperformance for Water Supply Interruptions
- £6.67m outperformance for Internal Flooding Incidents
- £0.02m outperformance for Working with Others
- £6.13m underperformance for Drinking Water Contacts

This means that for the four years from 2015-2019 our progressive improvement in services means we have earned a net indicative outperformance of £36.01m, this is made up of:

- £12.40m outperformance for Category 3 Pollution Incidents
- £20.04m outperformance for Water Supply Interruptions
- £16.16m outperformance for Internal Flooding Incidents
- £0.01m outperformance for Working with Others
- £12.70m underperformance for Drinking Water Contacts

Now that our investment programmes for AMP6 are mature, we can forecast the likely outturn performance against the commitments. This yields a forecast net outperformance position of £60.33m made up of:

- £21.48m outperformance for Category 3 Pollution Incidents
- £30.26m outperformance for Water Supply Interruptions
- £25.18m outperformance for Internal Flooding Incidents
- £0.21m outperformance for Working with Others
- £0.25m for Leakage
- £0.23m for River Length Improved
- £17.29m underperformance for Drinking Water Contacts

In summary the water wholesale ODI outperformance is forecast to be £13.62m, and for the wastewater wholesale ODI the outperformance is forecast at £46.70m.

Total expenditure (Totex) outperformance

Returning to totex outperformance, overall our investment in services is delivering improved service for customers. Overall, we are expecting to overinvest in services and assets by £93m (at 2012/2013 prices) compared with the allowed expenditure of £3.42bn for the period 2015-2020.

It is important to note that we have experienced significant unexpected totex to recover the performance and condition of assets damaged during the floods on 26 December 2015. In this case we received £51.9m (2012/2013 prices) of insurance reflecting the fair value of estimated exceptional costs to restore the assets. This is not reflected in our allowed totex. Adjusting for this exceptional totex changes the overinvestment from £93m to £41m (at 2012/2013 prices).

Furthermore, after our original PR19 submission we responded to a query received from Ofwat (YKY-DD-OC-003) on the 11th April 2019. Remaining consistent with the approach detailed in that response we are forecasting a total penalty for drinking water quality contacts of ~£17m (2012-13 price base) in AMP6. As we are reinvesting this sum, in AMP6, as part of our upper quartile plans we need to further adjust totex investment. This ensures this investment is excluded from the totex sharing mechanism and that our shareholders bear the full financial responsibility for this penalty. Adjusting for this sum changes the overinvestment from £41m to £24m (at 2012/2013 prices).

The two graphs in this section illustrate the delivery for each of the water and wastewater wholesale services. For each year we show the allowed expenditure, the actual/forecast expenditure and the difference. Where we have expended less than was allowed the difference is shown in green. Where we have expended more this is highlighted in red.

For the water service, we have delivered the required performance for £39m (at 2012/2013 prices) less than the allowance in the first three years. This has been a function of efficient planning and delivery of projects coupled with some rephasing of works to ensure effective delivery later in the plan.

In the last year we have seen an acceleration of delivery of activity to meet our drinking water improvements coupled with additional costs to reduce the number of times customers need to contact us about the appearance of their drinking water. We have also injected significant additional activity into the plan for the remainder of the period to drive up service standards in response to feedback from customers, who told us they expect better service from us.

We have also experienced further unexpected totex to support additional find and fix activity associated with leakage as we saw an unprecedented number of network outbreaks caused by extreme weather changes.

To date we have achieved, and continue to forecast that we will achieve, acceptable service level performance on all our water and cross business performance commitments, except for drinking water quality contacts which, in 2018-19, has attracted a penalty of £6m and for the AMP we are forecasting a total penalty of ~£17m (2012-13 price base). This sum our shareholders are reinvesting this AMP to improve performance for customers within the water

programme. The reinvestment and additional activity within the period is forecast to result in a financial reward in the areas of Water Supply Interruptions and Leakage.

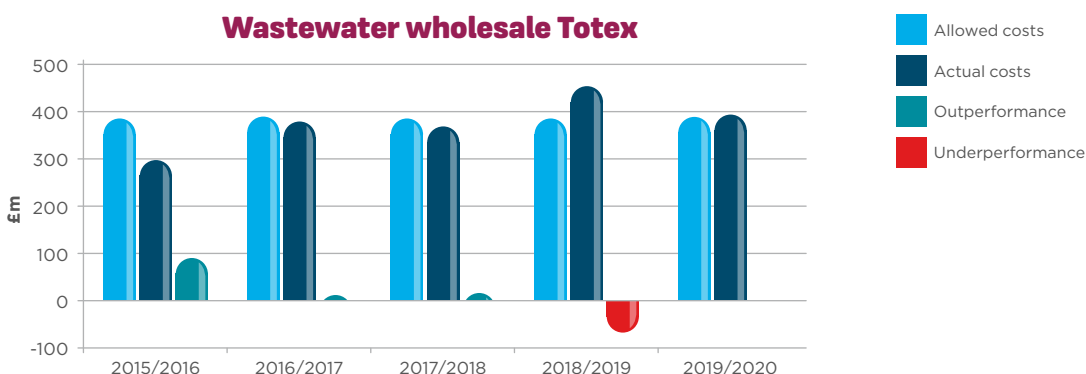
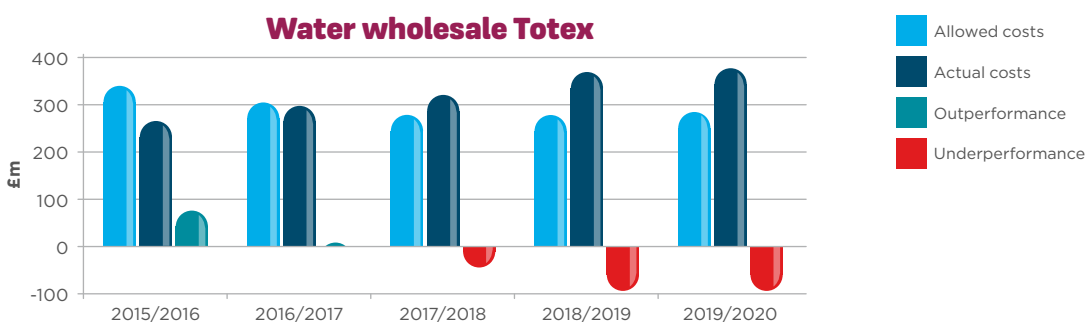
Overall, we forecast to overspend the water totex allowance by £145m (at 2012/2013 prices). This is represented in the Water Wholesale Totex diagram below. Adjusting for the penalty reinvestment, as explained above, reduces the underlying overspend to £127m.

This shows an increase of £33m to our forecast overspend from our July 2018 forecast of £94m. The main reason for this increase is due to the additional operating costs observed in 2018/2019 due to the impact of the prolonged dry summer, although due to the rephasing of the capital programme the totex impact is seen in 2019/2020.

For the wastewater service, we have delivered the required performance for £116m (at 2012/2013 prices) less than the allowance in the first three years. As with the water programme, this has been a function of efficient planning and delivery of projects. In addition, our national environmental improvement programme went through a significant reprioritisation with the Environment Agency. This meant that we had to update our programme which has resulted in expenditure occurring in the latter years of the programme.

In the latter two years of the plan we observe increased activity from the updated national environment programme coupled with significant additional activity into the plan to drive up service standards associated with reducing sewer flooding of homes and pollution incidents in response to customer expectations.

Our investment to date has supported the successful delivery of our wastewater or cross business performance commitments in the first four years of the current period.



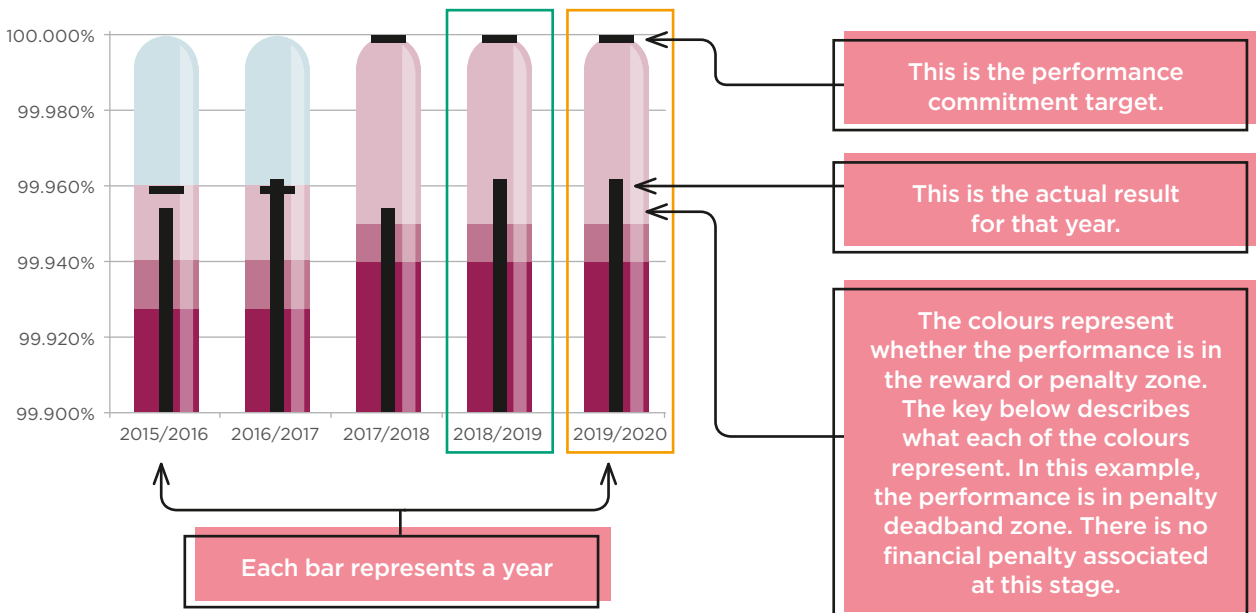
To date we have achieved and continue to forecast to achieve strong service level performance on all our wastewater or cross business performance commitments. The reinvestment of outperformance and additional activity within the period is forecasting to result in a financial reward in the areas of Internal Flooding and Pollution.

Overall, we are forecasting an outperformance of £51m (at 2012/2013 prices) against the wastewater totex allowance. This is represented in the diagram below. Adjusting for the exceptional flood recovery totex increases the underlying outperformance to £103m.

This shows an increase of £9m to our forecast outperformance from our July 2018 forecast of £94m.

Understanding the chart

We will show how we are performing against our performance commitments using charts like the example below.



Key

- | | |
|---|--|
| Performance better than outperformance cap | Performance worse than underperformance collar |
| Performance between outperformance cap & outperformance deadband | Performance between underperformance collar & underperformance deadband |
| Performance in outperformance deadband/no financial reward associated with good performance | Performance in underperformance deadband/no financial penalty associated with poor performance |
| Our actual performance for this year (2018/2019) | Our forecast performance for next year (2019/2020) |

We have included our anticipated performance for 2019/2020 on our charts. It is important to note that future performance is dependent on a number of factors.

Customer Outcome: We provide you with water that is clean and safe to drink

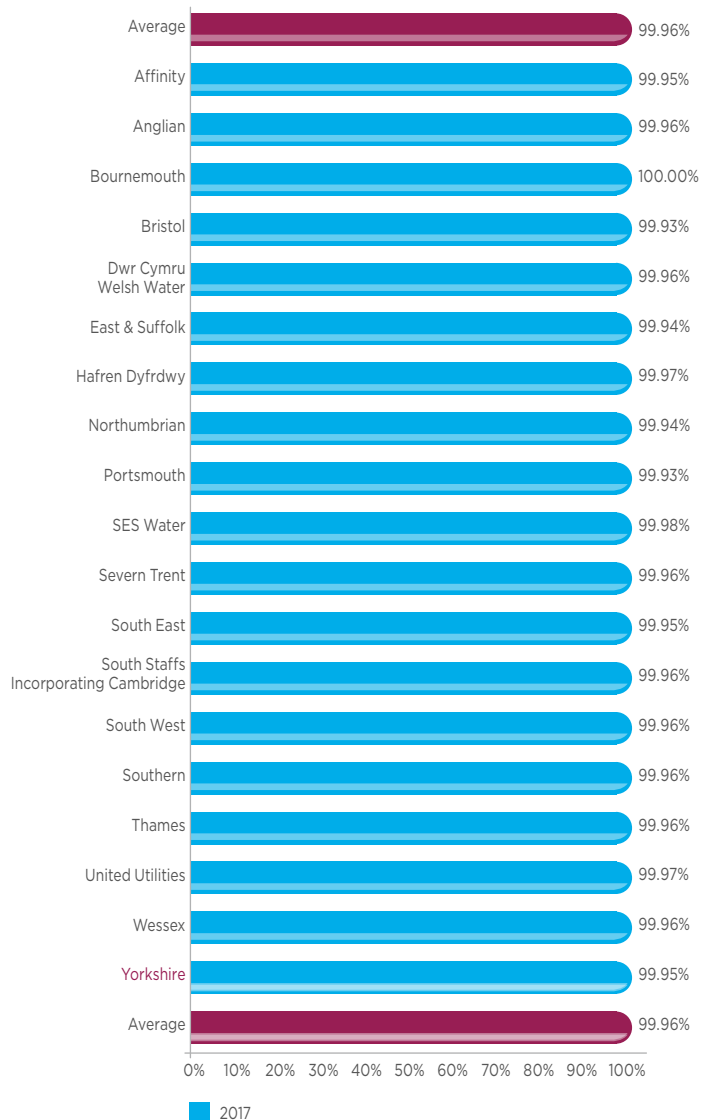
There are four performance commitments under this outcome.

Drinking water quality compliance	
Measure	Drinking water quality. This is the mean zonal percentage compliance from the regulatory sampling programme, as calculated by the DWI.
Unit	Percentage.
Definition	Based on the DWI's Mean Zonal Compliance (MZC) as set out in 'Calculation and composition of indices published in the Chief Inspector's Report', DWI, May 2013.
Period	Calendar year measure - reported in the following year i.e. 01 Jan 2015 - 31 Dec 2015 reported in 2015/2016.
Target	99.960% (Years 1 and 2) and 100% (Years 3-5) Reported to 3 decimal places.
Incentive	Both reputational and financial incentive The Drinking Water Inspectorate (DWI) can take enforcement action if performance deteriorates. Penalty is calculated annually.

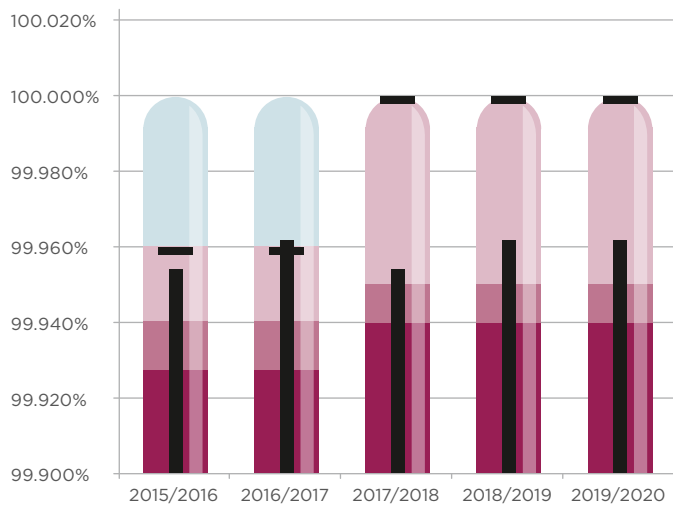
How did we compare last year with other water companies?

The chart below, taken from the Discover Water website compares our drinking water quality against other water companies. The performance is based on water quality tests known as Overall Mean Zonal Compliance. In 2017, our water quality compliance was 99.953%. Please note, this is a calendar year measure from 01 January 2017 to 31 December 2017.

Source: Discover Water - discoverwater.co.uk/quality



Performance graph - higher is better



See page 63 of this report for an explanation of what this graph shows and the key.

Performance data table

Performance Commitment	Units	Actual				Forecast
		2015/2016	2016/2017	2017/2018	2018/2019	2019/2020
Drinking water quality compliance	%	99.954	99.962	99.953	99.962	99.962

Result: 99.962%

Target: We unfortunately didn't meet our ambitious target of 100%.


Performance summary

Customers in Yorkshire expect that the drinking water we supply is of the highest possible quality. Because of this we have set ourselves the target of achieving 100% compliance with the Drinking Water Inspectorate's (DWI) requirements. Achieving this target is a long-term goal and means we will need to make improvements from source to tap. In 2018 we managed to achieve an improvement in the overall compliance figure from 99.953% to 99.962%.

This improvement was delivered due a drop in the total number samples failing the required standards (we had 32 in 2018 compared with 43 in 2017). In particular, there was drop in the impact on compliance from the number of samples failing the standard for the key health parameter of lead. There was also a reduction in the number of occasions that tastes or odours were found in samples collected from properties right across Yorkshire.

Year	Performance	Target	Commitment met
2015	99.954%	99.960%	Target not met (X)
2016	99.962%	99.960%	Target met (✓)
2017	99.953%	100%	Target not met (X)
2018	99.962%	100%	Target not met (X)

We met our drinking water quality compliance target in 2016, but unfortunately, we haven't met our challenging target of 100% in the last two years. We have improved our performance in some areas, for example, we had two lead fails in 2018 compared to four lead fails in 2017. Primarily the cause of these failures is the condition of domestic pipework or fittings. However, phosphate dosing has been maintained to minimise plumbosolvency and failures from excessive nickel.



Plumbosolvency
Plumbosolvency is the ability of a solvent, notably water, to dissolve lead. Plumbosolvent water can cause damage to lead pipes. We counteract this by adding phosphate at our water treatment works, which forms a protective coating to the inside of lead pipes.

We had no individual pesticide fails in 2018 compared to 11 metaldehyde failures in 2017. This improvement is largely beyond our direct control as metaldehyde is not removed by existing pesticide treatment. It is likely the very dry conditions in the year reduced the farming usage of this pesticide and reduced the run-off into watercourses during the high risk autumn period.

There was the same level of failure for aluminium (2 failures) and manganese (1 failure) in 2017 and 2018. However, iron failures increased from 8 in 2017 to 15 in 2018. Prior to that, failure levels were 15 in 2015 and 7 in 2016. The main reason for this deterioration was that the programme of flushing was put on hold for a period early on in the year due to climatic factors (during the cold weather event referred to as the "Beast from the East" and then the following prolonged period of sustained fine weather). We have since resumed our programme of flushing and increased the size of the dedicated team to target and deliver the flushing.

Investments we have made over the past year to help meet our target

- £10.6m has been spent in the year on the ongoing upgrade to Langsett water treatment works to optimise the works to cope with changes in raw water quality, especially colour.
- £4.0m has been invested to upgrade Irton water treatment works to provide treatment facilities for the improved removal of Cryptosporidium, pesticides, disinfection by-products.

Underperformance or outperformance payment

We are currently in the underperformance deadband, this means that we have not incurred any penalties.

Lessons learnt and action plan

Lead, nickel and metaldehyde failures are the main factors that impact this performance measure. The long-term approach of dosing phosphate-based chemicals into all water supplies, in addition to targeted lead communication pipe replacement have resulted in an on-going trend of reduction in lead failures. We will continue to incorporate this into our programme of activity over the next year. Our phosphate dosing process will also provide a degree of protection against nickel failures. With regards to metaldehyde, we have engaged the farming community on their use of this pesticide and its impact on water quality. However, from 2020 the pesticide will be banned from use and therefore the future risk of metaldehyde impacting water quality is reduced.

Anticipated performance for year 5

We understand the importance of water quality to our customers and take this very seriously. Whilst we are predicting to underperform our performance commitment, we have a number of activities in place to continue to improve our performance. As previously stated, failures related to lead, nickel and metaldehyde are the main factors impacting this measure. The action we are taking to address these is likely to be seen in the long term. We will continue our programme of flushing and dosing phosphate-based chemicals into all water supplies.

What's coming up in the future which might affect performance?

The water industry is moving to a new measure for monitoring water quality compliance in AMP7. The new Compliance Risk Index (CRI) is a measure that has been used by the Drinking Water Inspectorate over the past 2 years. Water quality is independently measured by the DWI to provide reassurance that water supplies are safe and drinking water quality is acceptable to consumers. Drinking water quality is our customers' number one priority, and it is clearly of primary importance for the health and wellbeing of people in our region.

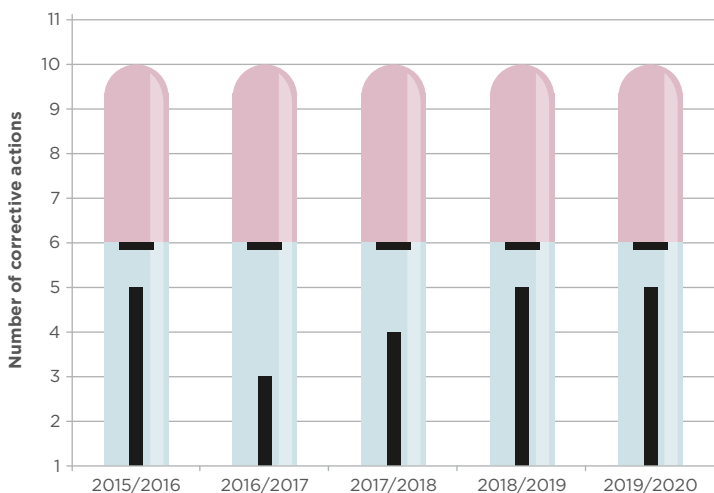
The current way of measuring water quality compliance is through the Mean Zonal Compliance (MZC) index. This was based on the number of failing samples, with a risk-based score covering water compliance failures across water supply zones, supply points and treatment works and service reservoirs.

The CRI score takes into account the potential consequence of the impact through assessing the significance of the parameter which has failed, the health risk associated with the parameter that has failed and the scale of the customers affected, while also including factors relating to the root causes and subsequent actions (investigative and remedial) by the company. We know that detections of microorganisms and turbidity at water treatment works would have a high impact on CRI, as do the frequently occurring failures in large water supply zones. We are already looking at how we can improve our performance in these areas to address the highest risk sites.

We've worked with the DWI through the development of the new CRI measure. There is still considerable variability in the way the risk-based monitoring approach is being implemented and the parameters included in the score. We will continue to engage with the DWI to ensure that the measure can be robustly compared across companies.

Corrective actions	
Measure	Potentially significant drinking water events which require corrective action.
Unit	Number.
Definition	<p>The number of potentially significant events notified to the DWI under the Water Industry (Suppliers' Information) Direction 2009, that have the potential for negative impact on public confidence in the water supply, for which the DWI has required us to take corrective action to maintain compliance or protect public health.</p> <p>The number is the number of events identified by the DWI requiring further action (defined as either a specific action or as a recommendation by the DWI in an Event Assessment Letter) by 1 June each year.</p>
Period	Calendar year measure published annually in July.
Target	Maximum of 6 per year.
Incentive	Reputational incentive. The Drinking Water Inspectorate (DWI) can take enforcement action if performance deteriorates.

Performance graph - lower is better



See page 63 of this report for an explanation of what this graph shows and the key.

Performance data table

Performance Commitment	Units	Actual				Forecast
		2015	2016	2017	2018	2019
Corrective actions	Number	5	3	4	5	5

Result: 5

Target: Achieved – maximum of 6 corrective actions per year.

Performance summary

We investigate every instance of suspected deterioration of water quality, and we share the outcome of our investigations with the Drinking Water Inspectorate (DWI) and health authorities. In 2018 there were five events for which corrective actions were needed following the investigation. Many events were associated with third party activity or were the result of private fittings within individual customer properties, for example taps. However, the high flows in water mains also resulted in an increase in the number of occasions that supply to customer's became discoloured.

In the calendar year 2018, a total of 31 events were notified to the DWI and other stakeholders. Nine of these events were classified as "significant" by the DWI and five were classified as "serious". Of these 14 events (classified as "significant" or "serious"), there were five Events with Corrective Actions, with a total of 12 recommendations received, associated with DWI's assessment of them. These are highlighted as recommendations in DWI's Event Assessment Letters. The events in question are as follows;

- 1) Ripponden: discolouration to supplies - 23/03/2018 (Two recommendations).
- 2) Hyde Park, Leeds: discolouration to supplies - 11/04/2018 (Three recommendations).
- 3) Langsett: loss of Chlorination - 24/06/2018 (Three recommendations).
- 4) Mytholmroyd: loss of supply and discolouration to supplies - 05/09/2018 (One recommendation).
- 5) Sharpe Howe SRE: - E. coli detection - 28/09/2018 (Three recommendations).

Year	Performance	Target	Commitment met
2015	5	6	Target met ✓
2016	3	6	Target met ✓
2017	4	6	Target met ✓
2018	5	6	Target met ✓

We have met the target for corrective actions for the last four years.

Underperformance or outperformance payment

This performance commitment is reputational only.

Lessons learnt and action plan

The key factor linking the water quality events in 2018 was disturbance of historic sediments resulting in discolouration of the water supply to our customers.

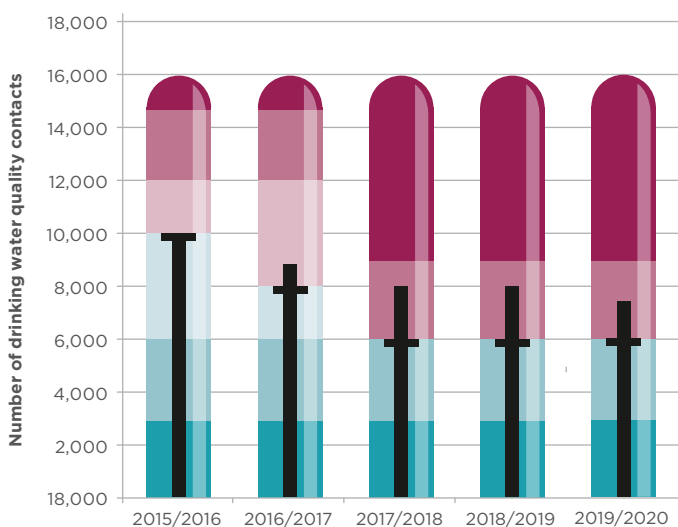
We sometimes need to make interventions on our pipes to make sure everyone has enough water, and this can result in disturbance to historic sediments. The previous process that had been in place to assess the risk related to these urgent interventions was not adequate for operation on a 24-hour basis. To make sure that we assess the risk faster in the future, we have made improvements to our process to make sure risks are understood managed.

Anticipated performance for year 5

We anticipate continuing to achieve our target for the corrective action performance commitment in year five.

Drinking water quality contacts	
Measure	Drinking water quality contacts for taste, odour and discolouration and illness.
Unit	Number.
Definition	The number of times customers contact us each year, in line with DWI reporting on rate of contacts for appearance, taste, odour and illness.
Period	Financial year measure.
Target	2014/2015 = equal to or less than 12,143 (starting position) 2015/2016 = equal to or less than 10,131 2016/2017 = equal to or less than 8,120 2017/2018-2019/2020 = equal to or less than 6,108
Incentive	Financial incentive. Outperformance/underperformance payments calculated annually.

Performance chart - lower is better



See page 63 of this report for an explanation of what this graph shows and the key.

Performance data table

Performance Commitment	Units	Actual				Forecast
		2015/2016	2016/2017	2017/2018	2018/2019	2019/2020
Drinking water quality contacts	Number	10,007	9,093	8,100	7,964	7,500

Result: 7,964

Target: Not achieved our target of receiving equal to or less than 6,108 drinking water quality contacts for taste, odour and discolouration and illness.

Performance summary

Our customers contacted us 7,964 times about the quality of their drinking water. This was a marginal decrease from 8,100 contacts in 2017/2018. Due to the weather conditions last year, we utilised our grid network to transfer water across the region in order to ensure continuous supply to all customers. Sometimes this led to a change in source water type for some supply areas, which we know some customers can identify as a change in taste.

However, these changes were carefully managed, and customers were kept fully informed.

We continue to invest in maintaining and improving our water treatment and water supply network across Yorkshire. This wasn't enough to meet the extremely challenging target, but our initiatives continue to reduce the number contacts we receive.

Investments we have made over the past year to help meet our target

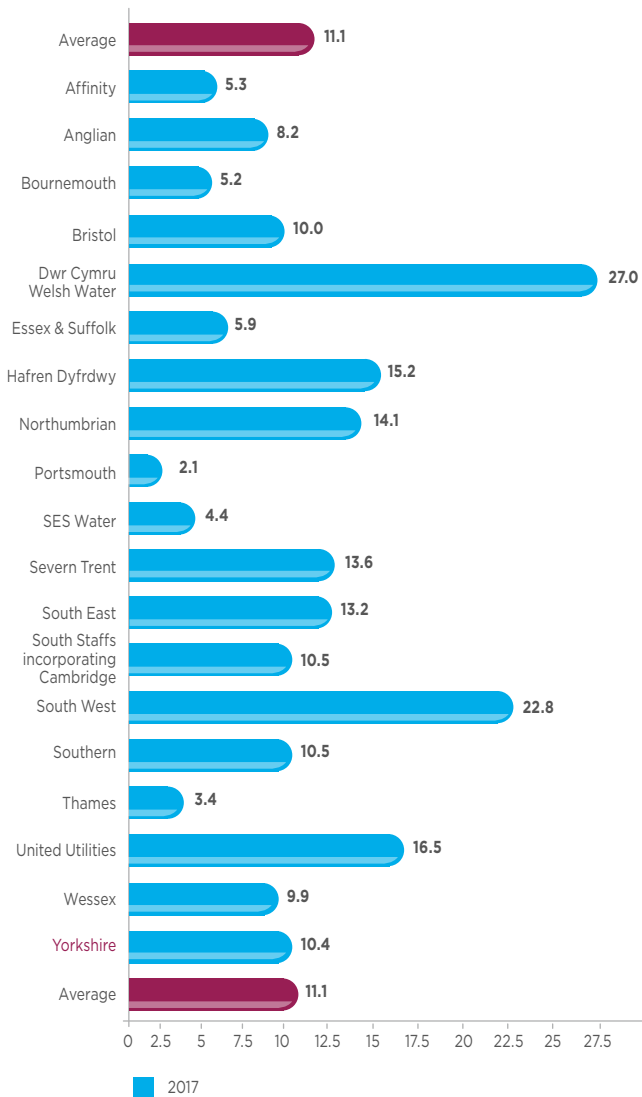
- £6.1m has been spent on various schemes to clean, reline and replace our water mains to improve the taste and appearance of our water.

How did we compare last year with other water companies?

The chart on the following page, taken from the Discover Water website shows how many times customers contacted their water companies about the appearance of their water. The chart shows the number of contacts per 10,000 people supplied. In 2017, we had 10.4 contacts for every 10,000 customers which is slightly lower than the industry average of 11.1.

It is important to note that our performance commitment on drinking water quality contacts has a different definition. This is a calendar year measure from 01 January 2017 to 31 December 2017.

Source: Discover Water - discoverwater.co.uk/colour



Underperformance or outperformance payment

We are currently in the underperformance zone for this performance commitment and have incurred a penalty of £6.12m.

Lessons learnt and action plan

Weather conditions in 2018 were challenging for the operation of stable mains networks, and we also needed to transfer water through our grid across the region from East to West. Both of these activities can result in a change to the taste, odour and discolouration of our water supply experienced by our customers.

However, significant efforts were made to manage any alteration in supply and targeted communication plans were put in place to make sure customers were aware of changes. This activity contributed to small decrease in the number of contacts received from customers in 2018/2019.

Anticipated performance for year 5

Our on-going processes of planned zonal flushing, as well as trunk mains condition assessment will continue to result in reduction in discolouration contacts. Continued careful management of changes in supply and interventions at Water Treatment Works will reduce the likelihood of contacts for taste or odour. Assessment of opportunities for further reduction of contacts of all types is underway. We expect to continue to reduce the number of water quality customer contacts in 2019/2020.

Overview of performance to date

AMP6 has seen a significant reduction in the number of contacts from customers; there were over 2000 fewer contacts in year 4 in comparison to year 1. The water quality contact rate continues to show year on year improvement, with a slight reduction of contacts in 2018/2019 in comparison to 2017/2018. There was a small increase in the number of discoloration contacts but over the same period taste or odour contacts have reduced slightly.

We are continuing our enhanced programme of flushing with expansion of a dedicated team to target and deliver the flushing. Improvements to the presentation of information on our website is also indicating that customers can, and do, now access help and advice across multiple formats.

Stability and reliability factor - Water quality	
Measure	Stability and reliability factor - Water quality
Unit	Classification: Deteriorating/Stable/Improving.
Definition	An overall assessment of long term stability and reliability for water quality, based on a basket of indicators. Assessment is based on the recent historical trend of the indicators. The basket of indicators for the long-term stability and reliability factor for water quality contains: <ul style="list-style-type: none"> • Water treatment works coliforms non-compliance (%) • Service reservoir coliforms non-compliance (%) • Turbidity (number) • Enforcement (incidents number) • Reactive equipment failures (No)
Period	Various (see sub measures).
Target	Stable (As assessed in Year 4 for Year 5 outturn). Assessment subject to independent external and Yorkshire Forum for Water Customers assurance.
Incentive	Financial incentive (underperformance payment only) - calculated in Year 4. Underperformance up to 10% totex for outcome.

Stability and reliability factor - Water quality sub measures

Sub measure	Water treatment works coliform non-compliance
Unit	Percentage
Definition	The number of water treatment works with determinations containing coliforms as a percentage of the number of determinations of water leaving treatment works taken at frequencies required by regulation 13 (Schedule 3, table 3, item 2), as specified in regulation 4 (schedule 1, table A, part II, item 1) of the 'Water Supply (Water Quality) Regulations 2000' (and its equivalent in Wales). This information is given in the Chief Inspector of the Drinking Water Inspectorate's Annual Report in the calendar year. This information may need to be amended after the publication of the Chief Inspector's Report.
Period	Calendar year measure
Target	Reference level = 0.04 High tramline = 0.07 Lower tramline = 0.01

Result: Stable

Target: Achieved

Performance summary

We continue to invest to maintain and improve our treatment and network assets all the way across Yorkshire. Our performance in 2018/2019 continued to be at our target level of 'stable'.

A basket of measures is used to give the overall assessment for this measure. There are five sub measures for this performance commitment.

More information on these sub measures can be found in Section 8 of this report.

Investments we have made over the past year to help meet our target

- £1.0m has been spent on a scheme at Elvington water treatment works to improve the resilience of the works.
- £1.2m was spent on an ongoing scheme at Cayton water treatment works to provide improvements to the disinfection process to reduce any water quality risks.
- £6.6m was spent in 2018-2019 on the ongoing Gas Replacement Programme which will improve the operational resilience of nine water treatment works by replacing the outdated gas dosing systems at the works.

Sub measure	Service reservoir coliforms non-compliance
Unit	Percentage
Definition	Number of service reservoirs with >5% of sample determinations containing coliforms expressed as a percentage of total number of service reservoirs.
Period	Calendar year measure
Target	Reference level = 0.00 High tramline = 0.24 Lower tramline = 0.00

Sub measure	Enforcement actions considered (microbiological standards)
Unit	Number
Definition	Number of enforcement actions as initiated by Drinking Water Inspectorate (DWI).
Period	Calendar year measure
Target	Reference level = 0 High tramline = 1 Lower tramline = 0

Sub measure	Water treatment works turbidity
Unit	Number
Definition	The number of operational potable water treatment works and sources whose turbidity 95 percentile is less than a 0.5 NTU threshold. Calculate percentile value using all data from regular routine sampling of final water at water treatment works for the calendar year. Minimum of 30 water samples where the works is in production for more than 11 months of the year. Otherwise, a minimum of 30 samples, less one sample per unit of four weeks that the works is not in supply. The maximum time interval between data samples is 28 days where works is in production for more than 11 months of the year, otherwise 28 days less one per unit of four weeks not in supply.
Period	Calendar year measure
Target	Reference level = 0 High tramline = 4 Lower tramline = 0

Sub measure	Reactive equipment failures
Unit	Number
Definition	The number of works orders created reactively for water quality assets.
Period	April to March
Target	Reference level = 6,771* High tramline = 8,380* Lower tramline = 5,161* *Given that this is a redefined measure, this will be revisited in 2017 with further data, analogous to the 2012 review of new measures.

Customer Outcome: We provide you with water that is clean and safe to drink

There are four performance commitments under this outcome.

Leakage	
Measure	Leakage.
Unit	Mega litres a day (MI/d).
Definition	The sum of distribution losses and supply pipe losses. This includes any uncontrolled losses between the treatment works and the customer's stop tap. It does not include internal plumbing losses.
Period	Financial year.
Target	The commitments have been set through the Water Resource Management Plan and are as follows: 2014/2015 = less than or equal to 297.1 (Starting level) 2015/2016 - 2017/2018 = less than or equal to 297.1 2018/2019 = less than or equal to 292.1 2019/2020 = less than or equal to 287.1
Incentive	Financial incentive.

How did we compare last year with other water companies?

The chart on the next page, taken from the Discover Water website shows the actual leakage of water companies versus their targets. This is the 2017/2018 leakage performance. Last year we missed our target by less than 1%.

Source: Discover Water - discoverwater.co.uk/leaking-pipes

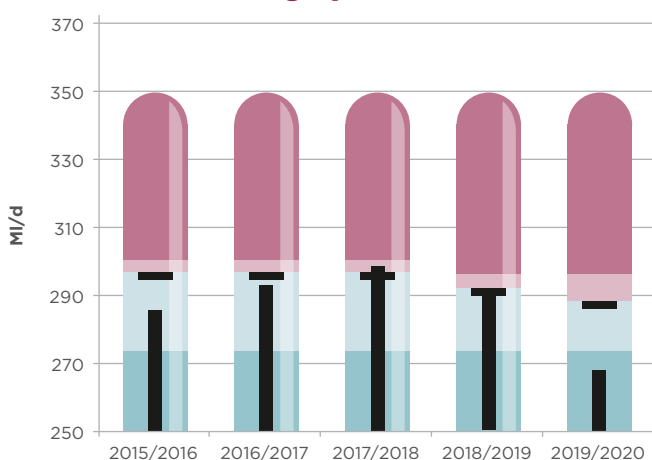
Performance summary

We actively measure, monitor and reduce leaks as the main source of water wastage. We have almost halved leaks since 1995 and this year we have achieved our performance commitment to make sure leaks are no higher than an average of 292.1 mega litres a day (MI/d) throughout the year. This is approximately equivalent to 118 Olympic size swimming pools 2 meters deep. In late 2017, we announced to reduce leaks by over 40% by 2025. During 2019 we will be enhancing the use of satellite technology to detect leakage across Yorkshire. We have doubled the amount of leakage inspectors to approximately 300 to make sure that more proactive leakage detection is undertaken. A total of 600 network listening devices were implemented in 2018. A further 34,000 will be installed by October 2019 and a team of expert analysts have been recruited to decipher the information that will be provided.

Investments we have made over the past year to help meet our target

- £23.3m has been spent on a variety of leakage reduction projects. This is part of our ongoing programme to provide Upper Quartile service levels to customers.

Performance graph – lower is better



See page 63 of this report for an explanation of what this graph shows and the key.

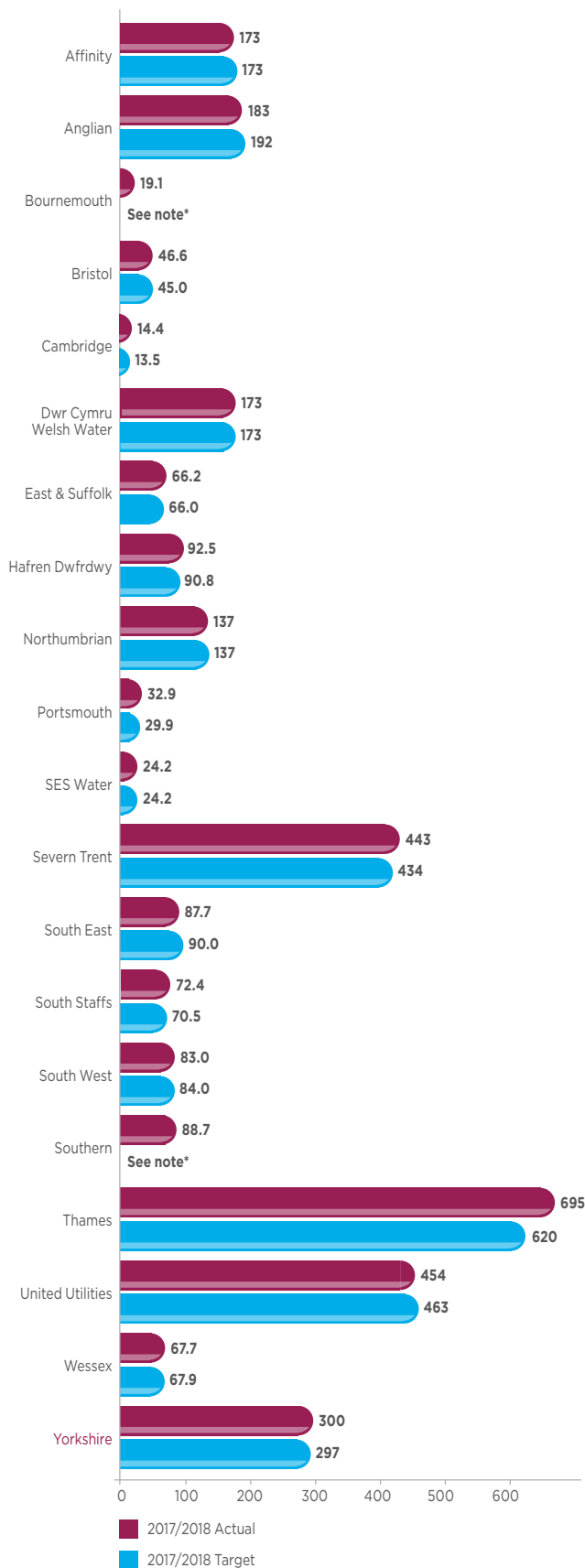
Performance data table

Performance Commitment	Units	Actual				Forecast
		2015/2016	2016/2017	2017/2018	2018/2019	2019/2020
Leakage	MI/d	285.1	295.2	300.3	289.8	269.0

Result: 289.8 MI/d

Target: Achieved target of less than or equal to 292.1MI/d

Million litres of water leaked (per day)



Million litres of water leaked (per day) shown to three significant figures
Source: Water UL

*Some water companies don't have targets for every year, they have targets they have to meet by 2020.

Overview of performance to date

Year	Performance	Target	Commitment met
2015/2016	285.1 MI/d	297.1 MI/d	Target met
2016/2017	295.2 MI/d	297.1 MI/d	Target met
2017/2018	300.3 MI/d	297.1 MI/d	Target not met
2018/2019	289.8 MI/d	292.1 MI/d	Target met

We have met our target every year of this AMP except for 2017/2018. This was a challenging year for us due to an unusual cycle of cold nights with warmer days, where we saw a 58 MI/d increase in leakage within a month, which is the largest increase we have seen since the severe winter freeze-thaw event in 2010/2011. We are pleased that our regulatory target for leakage was met this year. Although we met our regulatory target, we did not achieve the annual stretching outperformance target that we set ourselves of 276.0 MI/d to help us achieve our aim to reduce leakage by 40% between 2018 and 2025.

In order to meet our ambitious targets for the current period, additional proactive resources were deployed. The number of leakage technicians was increased from 140 to 272 over the year, with a peak of 370 resources at one point. In addition, repair and maintenance teams were also increased. The increased focus meant that proactive mains repairs increased by 127%, proactive communication pipe repairs by 222% and proactive supply pipe repairs by 318% (April 2018 to February 2019 against the previous three year average), leading to additional leakage volume saved. However, during the same period, we saw the effects of weather. We saw an increase in bursts of our mains caused by the 'Beast from the East' in February 2018, which continued to impact us at the start of this financial year. We also had an extended hot and dry period which resulted in increased customer demand and a significantly reduced soil moisture deficit leading to ground movement and therefore increased burst rate. The effects of this weather caused additional 'reactive' leakage to occur that under an "average year" would not normally be observed, meaning whilst additional volumes of leakage have been saved (compared to an average year), this was offset through the weather-related impacts. This relationship has created difficulty for the company in achieving our stretching current outperformance targets. Although, we did not meet the stretching outperformance targets we set ourselves in 2018/2019, we have rephased our proposed target levels for the next six years and we are still committed to reducing leakage by 40%.

Enhanced reporting accuracy and the efficient and effective targeting of resource are key elements in our drive to meet our ambitious leakage performance commitment. In order to gain the required insight and to fully understand what our data can tell us, a Data Science team has been created to focus on areas of continuous data improvement right across the business. One area of focus in 2018/2019 has been to identify potential improvements across all elements that contribute to the water balance. The team identified data improvements in the reporting of water consumption and leakage. The data improvements that were considered to be mature and robustly evidenced were shared with the technical auditor, Jacobs, who supported their implementation for 2018/2019. Further initiatives,

which required additional understanding or consideration were also shared with the technical auditor for information, but were not implemented in 2018/2019. We will continue to review these and other future opportunities to ensure a robust water balance and increase the accuracy of the resulting reported leakage and consumption volumes.

This additional resource has been critical in meeting our leakage performance target and also means that we start the next performance year at a historically low level of leakage for the time of year. The year-end position that we have experienced, is the second lowest since 2000.

Leakage is a targeted assurance area due failing our regulatory target in 2017/2018, forecasting that we might fail our leakage target in 2018/2019 and the ambition we had set ourselves to reduce leakage by 40%. Assurance through the year has been provided by the Delivery Assurance Groups (DAGs), who continue to review and challenge our monthly performance and set corrective actions when we deviate from target. The DAGs report through to a Wholesale Board and an Upper Quartile Steering Group, which ensures Directors are regularly briefed in detail on our leakage performance. Performance is also reviewed monthly at the Board. We have worked very closely with the Yorkshire Forum for Water Customers (the Forum) throughout the year to ensure they were fully informed of our position on this performance measure. As mentioned above, we engaged with our independent external technical auditors, Jacobs, in April 2019 to walk them through the various data improvements we proposed to incorporate into our reporting. Jacobs then completed a deep dive audit on leakage in May 2019 as part of the overall Annual Performance Report data audits. Jacobs concluded that we had followed our stated methodology, which is consistent with previous years, and that we have made improvements to our processes and assumptions. The assurance findings from Jacobs are detailed within its assurance statement, which can be found in Appendix 2 of this APR.

Underperformance or outperformance payment

We beat our performance commitment target of 292.1 MI/d this year, but not by enough to earn a financial reward. We are currently in the outperformance deadband.

Lessons learnt and action plan

To make sure that we continue to improve our leakage performance in 2019/2020, the following actions, based on lessons learnt, have been promoted:

- A permanently increased level of find and fix resource is required to provide an effective, reactive control for unpredicted events and to enable long run leakage to be reduced. This increase has been supported by an increase in the leakage data teams to provide a robust leakage process.
- 34,000 acoustic loggers have been purchased and these will have been installed and commissioned by September 2019.
- Data improvements are essential to reducing leakage by ensuring the leakage calculation is as accurate as possible. The Data Science team will continue to undertake a programme of reviews and development of new models through the remainder of the AMP 6 and to the end of the following AMP period.
- The HUB process developed for managing outstanding bursts repairs will be incorporated into a new organisational design for the year.

Anticipated performance for year 5

The target for leakage in 2019/2020 is 287.1 MI/d.

There are a number of actions which are being taken to facilitate improved leakage performance during the final year of AMP6 and into AMP7, including:

- A high level of Find and Fix capability will be maintained to ensure we can react to both day to day leakage requirements and to unusual events such as extreme weather. Externally provided leakage resource has now been brought in house to provide a more consistent approach.
- A plan is in place to complete the deployment of 34,000 acoustic loggers into the highest leak rate DMAs (Distribution Management Areas).
- An increase in the number of supply pipe repairs and supply pipe renewals is planned to support customer side leakage.
- Plans are being developed to increase the number of trunk mains being reported for leakage. The increase in reporting will require the number of flow meters to be increased significantly and the programme is likely to extend through the AMP7 period.
- There will be an ongoing programme of DMA Optimisation work, including increasing pressure management and DMA property reduction.
- Satellite Technology trials will continue through into AMP7.
- There will ongoing evaluation and development of new and emerging technologies including SMART metering, logging devices and network control.

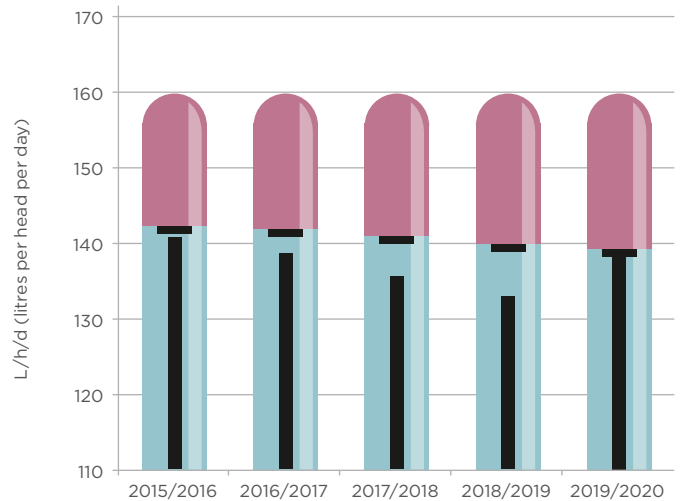
What's coming up in the future which might affect performance?

From April 2020, leakage will be measured differently against a new definition. This has been implemented across the industry to improve consistency of reporting between all the water companies in England and Wales.

In addition to the current way of reporting leakage, we have also been reporting against the new definition since 2016/2017 ahead of implementing this in 2020. There are a number of areas of the definition that we continue to review, understand and improve prior to its full implementation in April 2020. In 2018/2019, we have observed a greater than expected gap between current reporting and future reporting definitions. It is not immediately evident as to the contribution from our further refinements in reporting and the contribution made by the fact that 2018/2019 experienced atypical weather conditions, which will have impacted leakage. We will continue to review and better understand the drivers causing the change that has occurred this year. As a result, we are planning to propose a percentage reduction as a more appropriate way to present our leakage targets in AMP7, in line with Ofwat guidance. This will form part of our draft determination representations.

Water use					
Measure	Water consumption.				
Unit	L/h/d (litres per head per day).				
Definition	The average daily water consumption per head of population in measured and unmeasured households in a dry year. This is only for household consumption. This is sometimes also known as per capita consumption (pcc).				
Period	Financial year.				
Target	Starting Level 2014-15: 143.7 l/hd/d				
	Y1	Y2	Y3	Y4	Y5
Target - (l/hd/d)	142.6	141.5	140.4	139.3	138.3
Incentive	Reputational incentive.				

Performance graph - lower is better



See page 63 of this report for an explanation of what this graph shows and the key.

Performance data table

Performance Commitment	Units	Actual				Forecast
		2015/2016	2016/2017	2017/2018	2018/2019	2019/2020
Water Use	l/hd/d	141.7	137.4	135.9	133.5	133.3

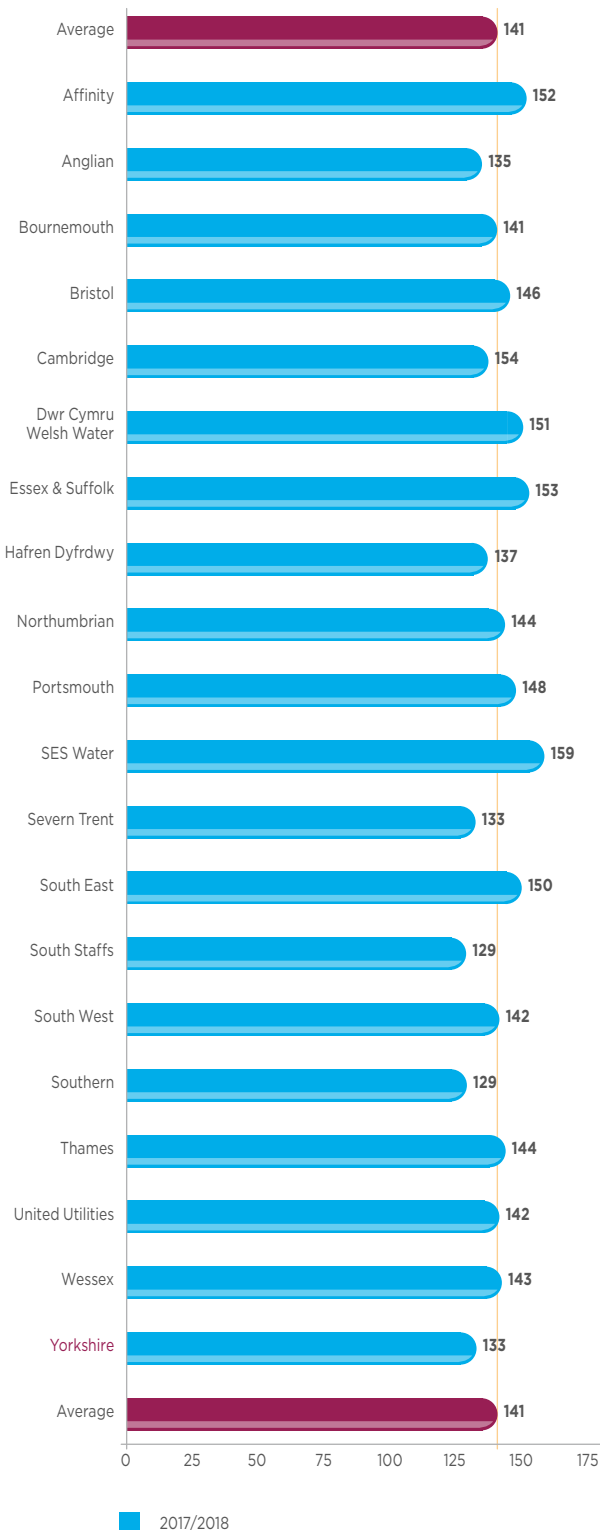
Result: 133.5 l/hd/d

Target: Achieved

How did we compare with other water companies?

The chart on the right, taken from the Discover Water website shows daily water usage, in litres, for each company's customers in 2017/2018. Last year, we were joint second.

Source: Discover Water - discoverwater.co.uk/amount-we-use



Performance summary

It is more important than ever that we all take care of water and consider how we use it. An increasing population means extra demand for water each day, while more extreme weather patterns due to climate change increase the risk of droughts happening. Water use is the average daily volume of water used per person in all metered and unmetered households. This is known as average per capita consumption (PCC) and is reported as litres per person per day.

In 2018/2019 the average water use by a person in Yorkshire was 133.54 litres per person per day. More information can be found on the dedicated water efficiency section of our website at: www.yorkshirewater.com/savewater

Overview of performance to date

We have achieved our target for water use every year in AMP6. Throughout AMP6 the reported water use (per capita consumption) has reduced. This is a result of increased metering of household properties, with associated reduction in water use. Household consumption is also impacted by water efficiency messages and water saving devices provided to customers as part of our campaign to reduce water use.

Investments we have made over the past year to help meet our target

- £7.0m has been invested this year fitting new water meters at the request of our customers.
- A further £1.8m has been spent replacing old water meters.

Underperformance or outperformance payment

This performance commitment is reputational only.

Water supply interruptions	
Measure	Water supply interruptions.
Unit	Minutes.
Definition	Number of minutes lost per property served in the year with supply interruptions for three hours or longer (irrespective of whether it was planned, unplanned or caused by a third party). Per property is the number of properties (domestic and non-domestic) connected for water supply. This includes properties which are connected but not billed (for example, temporarily unoccupied) but excludes properties which have been permanently disconnected. A group of properties supplied by a single connection should be counted as multiple properties. They should only be treated as a single property if a single bill covers all properties in the group. An interruption starts when water is unavailable from the first cold tap in a property and finishes when the supply is restored to the tap.
Period	Financial year.
Target	Annual target: 2014/2015 14.44 Minutes (starting position) 2015/2016 :13.63 Minutes 2016/2017: 12.81 Minutes 2017/2018-2019/2020: 12.00 Minutes
Incentive	Reputational and financial incentive. £2.5m per property minute for both the penalty and reward. Calculation will use actual number of minutes calculated to 2 decimal places. Outperformance and underperformance payments are calculated annually.

How did we compare with other water companies?

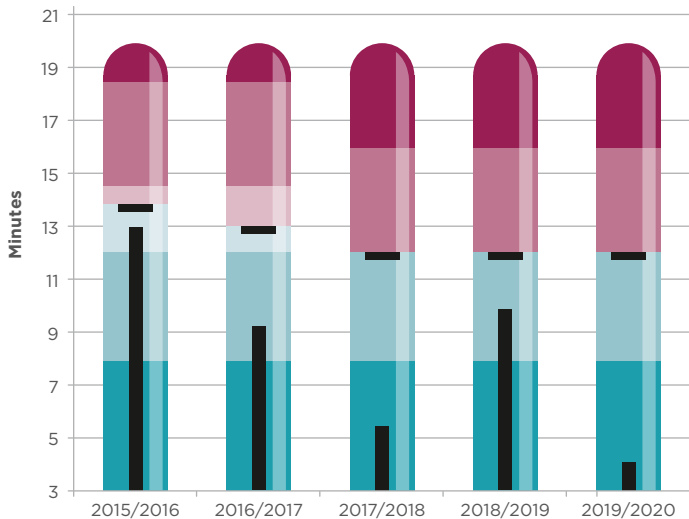
The chart on the next page, taken from the Discover Water website shows whether water companies have met their targets for water supply interruptions in 2017/2018. If the actual loss of supply is less than the target, the company has beaten the target. The figures in this chart are presented as minutes and seconds. Last year, we beat our target by over five minutes.

Source: Discover Water - discoverwater.co.uk/loss-of-supply

Performance summary

Interrupting the water supply to customers may be essential for emergency, planned maintenance work or significant asset failure, but is something we aim to reduce as far as possible because we know how it can impact on people. Our performance commitment for water-supply interruptions is measured by the average number of minutes that are lost due to interruptions to the water supply lasting three hours or more for each property we serve. At 10 minutes and 28 seconds in 2018/2019, we have performed ahead of the performance commitment of 12 minutes.

Performance graph - lower is better



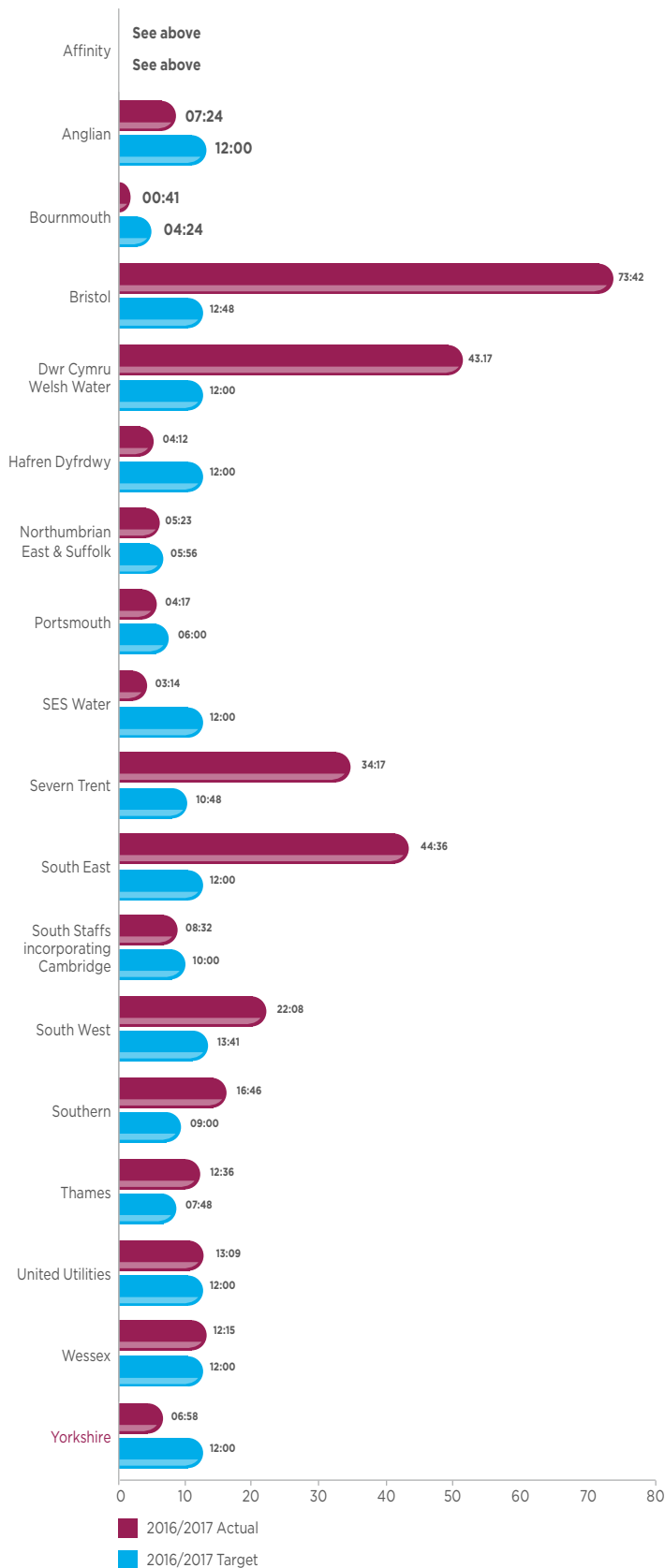
See page 63 of this report for an explanation of what this graph shows and the key.

Performance data table

Performance Commitment	Units	Actual				Forecast
		2015/2016	2016/2017	2017/2018	2018/2019	2019/2020
Water supply interruptions	Minutes and seconds	12:53	9:47	6.58	10.28	4.00

Result: 10 minutes and 28 seconds

Target: Achieved target



Overview of performance to date

We have met our target for water supply interruptions every year so far in AMP6. However, for the first time in three years, we have failed to improve on last year's performance due to the long dry summer causing burst mains. Last year we delivered our best ever performance of 6 minutes and 58 seconds. We mitigated a further deterioration in performance this year by implementing several initiatives as part of our ongoing Customer Minutes Lost programme. These initiatives were based on an improved operational response, delivered by the control room engineers managing network failures, and the restoration team, mitigating the impact of events by responding quickly to restore customers supplies.

The performance commitment for water supply interruptions has been highlighted as an Upper Quartile (UQ) measure for the AMP7 period, our aspiration is to be industry leaders (frontier) in this measure. To prepare for frontier performance, the business plan target for 2018/2019 was reduced below the original performance commitment target of 12 customer minutes lost (minutes). This target will continue to reduce year on year in our bid to be industry leaders by Year 5 of AMP7.

Performance against the UQ target has been challenging due to the unusual weather patterns experienced in the year.

In the summer, an extended hot and dry period resulted in an increase in volume of network failure. We believe that these failures were caused by several factors, including increased demand, a significantly reduced soil moisture deficit leading to burst pipes and increased activity on the network by Yorkshire Water and our service partners. A lead measure for water supply interruptions is the volume of emergency jobs we receive which are due to a customer reporting no water, a catastrophic burst or an asset alarm received in our control room. During the summer months (July, August and September) we saw a 73% increase in these measures based on the same period in 2017/2018. In July we received more than double the number of the previous year.

Investments we have made over the past year to help meet our target

- £1.2m was spent on the Bradford Cross City structural main replacement which has been out of service since it suffered a catastrophic failure in 2011. This main provides us contingency to maintain supplies in the event of a failure of the Bradford Ring Main.

Underperformance or outperformance payment

We received an Outperformance payment of £4.02m. Based on the reward rate of £2.55m per minute, below the 12-minute performance commitment.

Lessons learnt and action plan

We have learned this year that the delivery of our upper quartile programme of initiatives will assist us in improving performance further and enable us to be more resilient if we experience further increased levels of network failure in the future. We can also improve our performance by becoming more efficient when planning activities which may impact upon the interruption measure.

Anticipated performance for year 5

We are forecasting performance of 4 minutes in 2019/2020. We have identified three key initiatives to enable us to become industry leading by the end of AMP7. These are in delivery as part of our Customer Minutes Lost programme. These initiatives are:

Improved Operational Response

As part of the drive to reduce customer minutes lost, a team of six engineers working 24/7 have been recruited to bolster the network experience and knowledge. This will ensure that key network intervention decisions are made and communicated to the field teams to minimise the number of properties affected by an interruption. This has now been put in place and positive results have been seen in the last quarter of 2018/2019. Another important initiative has been the creation of a restoration team. The teams are based across the Yorkshire Region and form part of the reactive quick response teams to bring service back to customers at a quicker rate. An initial team of 16 technicians working 24/7 are already in place and this will be doubled by September 2019. The team are the eyes on the ground and relay key information back to the engineers in the control room.

Improved data analysis and planning

We have increased the size of our analytical team to undertake enhanced reviews of past and current incidents. Key outputs of these reviews have been to undertake root cause analysis on all the incidents and to develop a complete set of critical factors. These critical factors and the key drivers that cause the supply interruption durations are used to improve processes and technician training.

Increased network visibility

There are two key initiatives forming part of network visibility and these are summarised below:

Improve accuracy of schematics: Ensuring that all network information is accurate and up to date on all corporate systems is important to us. We have set a target to review and update 300 Distribution Management Area (DMA) schematics each year. This will make sure that the field technicians and engineers have the right information to hand when out in the field. This will ensure that exact locations of valves are clearly identified, and which customers will be affected by any action taken on that valve.

Enhance the deployment of pressure loggers:

Upper Quartile (UQ) plans for Leakage and Supply Interruptions are predominantly based on improving reaction to network failure with improved management and mitigation. Increased network visibility was identified as a major factor in supporting the early detection of network events and providing in-event and post-event information.

Both Leakage and Supply Interruption UQ performance require improved visibility. For leakage the requirement is for additional flow and pressure loggers where DMAs require optimising, size reduction and/or pressure management. To improve the visibility of the network and enhance water supply interruption performance, pressure logging at the

lower elevation points within a DMA is required. These additional loggers will provide an enhanced view of the network, enabling us to improve incident management and retrospective reporting. We plan to deploy the new loggers by the end of March 2020.

What's coming up in the future which might affect performance?

We are at an increased risk of future adverse weather conditions impacting on levels of network failure, given the evidence to suggest that we will continue to experience the effects of global warming. We are also always at risk of a large single event having a significant impact on the year end performance. However, the ongoing delivery of the customer minutes lost programme will assist to mitigate the impact of these risks and achieving our ambitious leakage targets with increasing number of times we interrupt customers' supplies.

Stability and reliability factor - Water network	
Measure	Stability and reliability factor - Water network
Unit	Classification: Deteriorating/Stable/Improving.
Definition	<p>An overall assessment of long-term stability and reliability for the water networks, based on a basket of indicators. Assessment is based on the recent historical trend of the indicators.</p> <p>The basket of indicators for the long-term stability and reliability factor for water networks contains:</p> <ul style="list-style-type: none"> • Total bursts (number) • Interruptions greater than 12 hours (number) • Low Pressure (number) • Customer contacts for discolouration (number per 1,000 population) • Distribution index TIM (as 100 minus Mean Zonal Compliance) (%) • Reactive equipment failures • Security of supply index
Period	Various (see sub measures)
Target	Stable in Year 4 for Year 5 outturn. Assessment subject to independent external and Yorkshire Forum for Waters Customers assurance.
Incentive	Financial incentive (Underperformance only). Underperformance payment assessed in Year 4 for Year 5 outturn.

Result: Stable

Target: Achieved

Performance summary

We treat and supply around 1.3 billion litres of drinking water each day, delivered by operating and maintaining over 50 water treatment works and a network of 31,000km of water mains. We have maintained 'stable' status in our performance commitment for the stability and reliability of our network. The status of this commitment is determined by a basket of measures which demonstrates the effectiveness of our long term planning and asset management to ensure the resilience and sustainability of our service. In particular, climate change presents a growing threat to maintain the balance between how much we can supply and how much you need, but we are well placed to manage this threat.

Investments we have made over the past year to help meet our target

- The Leeds Calm Network scheme is ongoing, and we spent £0.8m on this in 2018/2019. This scheme involves the installation of a 'smart network' which will allow us to monitor and actively operate our network remotely to minimise the risk of mains bursts and subsequent supply interruptions.
- There is a large amount of new development in the Harrogate area and to ensure that our water network can supply the new properties without any detriment to our existing customers we are investing in a series of network reinforcement schemes totalling £1.6m this year.
- We have started a large Reservoir Safety scheme at Redmires and Ten Acres Impounding Reservoirs to address recommendations made following the last inspection of these assets at a cost of £6.5m to date.

A basket of measures is used to give the overall assessment for this measure. There are six sub measures for this performance commitment.

More information on these sub measures can be found in Section 8 of this report.

Stability and reliability factor - Water network sub measures

Sub measure	Total bursts
Unit	Number
Definition	Mains bursts include all physical repair work to mains from which water is lost which is attributable to pipes, joints or joint material failures or movement, or caused or deemed to be caused by conditions or original pipe laying or subsequent changes in ground conditions (such as changes to a road formation, loading, etc. where the costs of repair cannot be recovered from a third party). Include ferrule failures that are attributable to mains material condition or local ground movements, but not incidents of ferrule failure due to ferrule materials or poor workmanship, or associated with the communication pipe connection. Exclude maintenance work on valve packings, hydrant seals, air valves etc. For the avoidance of doubt, all leakage occurring at locations or through joint or material failures which would have been designed for the life of the main (irrespective of whether earlier failure occurs) should be regarded as mains bursts. Failure of consumable or maintainable items (valve packings etc.) should be excluded. Exclude valve, hydrant, washout and air valve replacements. Include incidents of over-pressure or pressure cycling, and surge failures etc. which reflect the system operating conditions, even where these failures are accidental rather than associated with weaknesses in pipe condition. All third party damage should be excluded where costs are potentially (rather than actually) recovered from a third party
Period	April to March
Target	Reference level = 5,173 High tramline = 7,710 Lower tramline = 5,680

Sub measure	Low Pressure
Unit	Number
Definition	The total number of properties in the company's area of water supply which, at the end of the year, have received and are likely to continue to receive a pressure of less than 10m head (or a flow of less than 9l/min at 10m head).
Period	April to March
Target	Reference level = 15 High tramline = 67 Lower tramline = 0

Sub measure	Customer contacts for discolouration
Unit	Number per 1000 population
Definition	Number of customer contacts regarding discolouration divided by 1000 population.
Period	Calendar Year
Target	Reference level = 1.18 High tramline = 1.57 Lower tramline = 1.44

Sub measure	Interruptions greater than 12 hours
Unit	Number
Definition	The number of properties affected by unplanned supply interruptions, of more than twelve hours' duration.
Period	April to March
Target	Reference level = 5,173 High tramline = 7,710 Lower tramline = 5,680

Sub measure	Distribution index TIM (as 100 minus Mean Zonal Compliance)
Unit	Percentage
Definition	The arithmetic mean of the zonal compliance values for Yorkshire Water zones and supply pipes for turbidity, iron and manganese only (as 100-mean zonal compliance).
Period	Calendar year measure
Target	Reference level = 0.20 High tramline = 0.34 Lower tramline = 0.06

Sub measure	Reactive equipment failures
Unit	Number
Definition	The number of works orders created reactively for water network assets and also including pumping stations.
Period	April to March
Target	Reference level = 1,825* High tramline = 2,261* Lower tramline = 1,388* *Given that this is a redefined measure, this will be revisited in 2017 with further data, analogous to the 2012 review of new measures.

Customer Outcome: We take care of your waste water and protect you and the environment from sewer flooding

There are four performance commitments under this outcome. **Performance data table**

Internal flooding	
Measure	Internal flooding incidents.
Unit	Number per year.
Definition	Total number of incidents of internal sewer flooding of homes and businesses in the year. Includes any incident of internal flooding to normally occupied buildings and includes schools, offices, commercial premises and public buildings. The measure includes incidents due to other causes, including blocked and defective gullies and overloaded sewers in rainfall events up to and included 1 in 30 year return period, incidents in exceptional rainfall events are excluded. All incidents are included, including damp/wet only patches. Incidents of flooding via the sewers caused by high river levels, inundation due to surface run-off or overflowing watercourses are excluded. The measure includes assets transferred to Yorkshire Water in October 2011.
Period	Financial year.
Target	Starting Position 1,857 2014/2015 rising to 1,919 from 2017/2018. This has been calculated using Monte-Carlo uncertainty analysis (assumes hydraulic and non-hydraulic flooding incidents are independent). Upper and lower deadbands have been set by actual median values in the data set from 2007 to 2013.
Incentive	Financial incentive. Outperformance and underperformance payments are calculated annually.

Performance Commitment	Units	Actual				Forecast
		2015/2016	2016/2017	2017/2018	2018/2019	2019/2020
Internal Flooding	Number	1,842	1,769	1,682	1,692	1,463

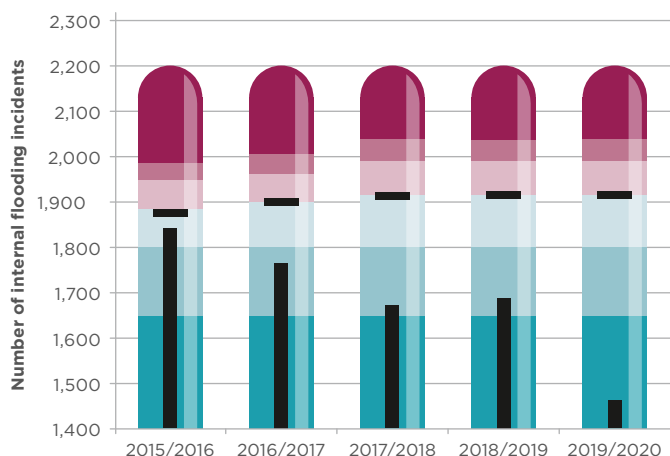
Result: 1,692

Target: Achieved

Performance summary

Each day we collect, treat and return one billion litres of waste water safely back into the environment. The way in which we do this improves river water quality and biodiversity in our region. We also play our part in managing flood risk in our region by providing the public drainage network and working with other flood management agencies to manage short-term incidents and long-term plans. We know that internal sewer flooding of homes is one of the worst things that customers can experience from our activities. We continue to work hard to prevent this from happening. We had 1,692 internal flooding incidents this year which is a slight increase on the number of incidents reported in 2017/2018 of 1,682. Our performance is below the target of 1,919.

Performance graph – lower is better



See page 63 of this report for an explanation of what this graph shows and the key.

Overview of performance to date

Year	Performance	Target	Commitment met
2015/2016	1,842	1,877	Target met ✓
2016/2017	1,769	1,898	Target met ✓
2017/2018	1,682	1,919	Target met ✓
2018/2019	1,692	1,919	Target met ✓

We work hard to reduce the number of internal sewer flooding incidents year on year. Unfortunately, we saw a small increase this year due to an increase in the number of reportable collapses when compared to 2017/2018. This is partly due to the dry weather meaning low flows in sewers leading to a higher likelihood of blockage.

Investments we have made over the past year to help meet our target

- £17.5m spent on a variety of Upper Quartile internal flooding reduction projects.
- £5.2m was spent on a couple of ongoing schemes in Goole to resolve internal flooding issues at Attlee Drive and Larsen Road.

Underperformance or outperformance payment

We are currently in the outperformance band for internal flooding with a reward of £6.67m.

What's coming up in the future which might affect performance?

The insourcing of service partner jetting activity is expected to deliver benefits for performance from improved on site investigation and focus on first time resolution.

External flooding					
Measure	External flooding incidents.				
Unit	Number per year.				
Definition	Total number of incidents of areas affected by external flooding in the year. Includes property curtilage, highways, car parks, footpaths, public open space, fields, agricultural land, woodland and flooding to buildings not defined as internal flooding. The measure includes incidents due to other causes, including blocked and defective gullies and overloaded sewers in rainfall events up to and included 1 in 30 year return period, incidents in exceptional rainfall events are excluded. All incidents are included, including damp/wet only patches. Incidents of flooding via the sewers caused by high river levels, inundation due to surface run-off or overflowing watercourses are excluded. The measure includes incidents arising from assets transferred to us in 2011.				
Period	Financial year.				
Target	Starting Level 10,125 in 2014/15.				
	Y1	Y2	Y3	Y4	Y5
Performance commitments -(No)	10,125	10,363	10,487	10,487	10,487
Incentive	Reputational incentive.				

Performance data table

Performance Commitment	Units	Actual				Forecast
		2015/2016	2016/2017	2017/2018	2018/2019	2019/2020
External Flooding	Number	9,037	9,145	9,296	9,116	10,487

Result: 9,116

Target: Achieved

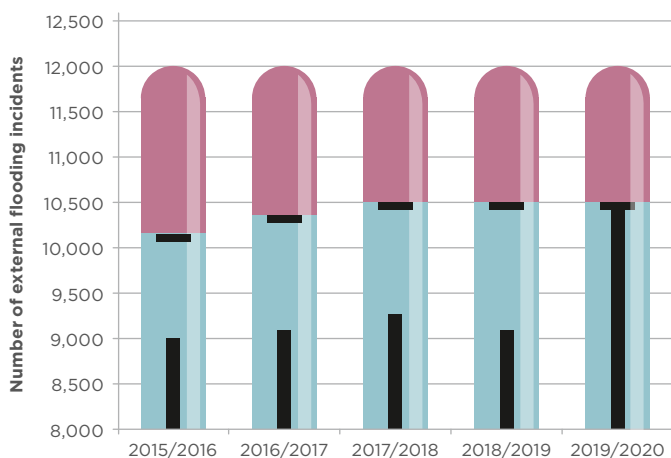
Performance summary

We know that internal and external sewer flooding of homes is one of the worst things customers can experience from our activities and we continue to work hard to prevent this happening. In 2018/2019 we met and bettered our commitments for both internal and external sewer flooding. The number of sewer flooding incidents both internally and externally have reduced on the previous year. We had 9,116 external flooding incidents this year which is a slight decrease on the number of incidents reported in 2017/2018 of 9,296.

Overview of performance to date

Year	Performance	Target	Commitment met
2015/2016	9,037	10,125	Target met
2016/2017	9,145	10,363	Target met
2017/2018	9,296	10,487	Target met
2018/2019	9,116	10,487	Target met

Performance graph – lower is better



See page 63 of this report for an explanation of what this graph shows and the key.

We have reduced the number of external flooding incidents from last year by 1.9% and have continued to meet our performance commitment target.

Underperformance or outperformance payment

This performance commitment is reputational only.

Minor and serious pollution incidents

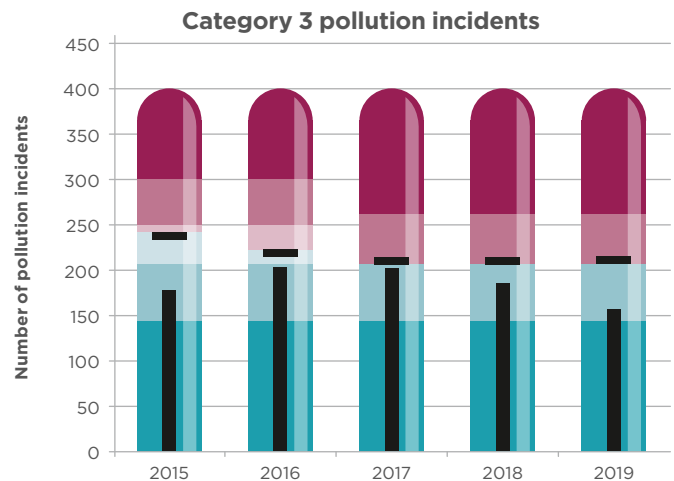
Measure	Pollution incidents.					
Unit	Number per year.					
Period	Calendar year measure (reported in the following year).					
Definition	<p>Total number of category 1-3 pollution incidents caused by a discharge or escape from any Yorkshire Water waste water asset each year (this covers all consented and non-consented intermittent events, but not continuous discharges).</p> <p>This measure includes all waste water assets, that is surface water assets are included, and excludes impacts from private pumping stations that transferred in 2015.</p>					

Target	2014	2015	2016	2017	2018	2019
Category 1-2	10	8	6	4	2	0
Category 3	250	237	224	211	211	211

Incentive Financial Incentive – only applies to category 3 incidents. Outperformance and underperformance payments are calculated annually.

There is also a reputational incentive. The Environment Agency can take enforcement action and pursue penalty through courts. Should the number of successful court prosecutions on category 3 incidents exceed the deadband range, then the number of the prosecutions in excess of the penalty deadband will be deducted from the number of pollution incidents for which the penalty rate is to be applied.

Performance graph - lower is better



See page 63 of this report for an explanation of what this graph shows and the key.

**Result: 11 Category 1 and 2 incidents
188 Category 3 incidents**

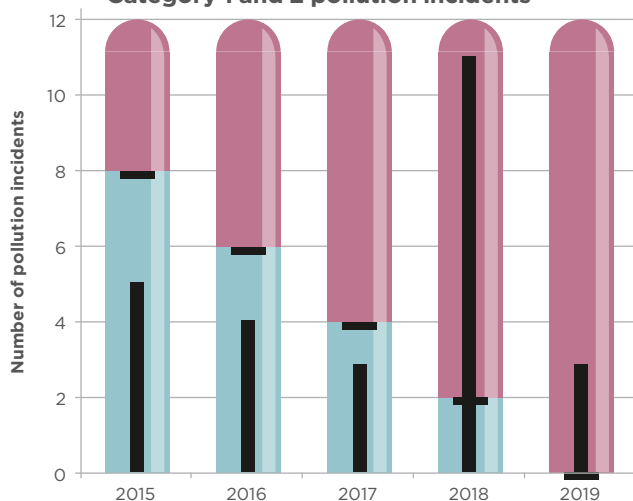
**Target: Not achieved Category 1 and 2 target of 2 or fewer
Achieved the Category 3 target of 211 or fewer**

Performance summary

We are very disappointed with the number of serious pollution incidents we experienced in the year and we know we must do better. We had 11 serious pollution incidents in 2018. This was against a target of 2 and is also a deterioration from our previous year's performance when we experienced 3 serious pollution incidents. Performance can fluctuate each year because performance can be influenced by the weather. Of the 11 serious pollution incidents in 2018, 6 were incurred during a period where the watercourses were either "notably" or "exceptionally low" (source: EA Hydrology Situation Report). However, this is not an excuse and we know we need to do better. We take pollution incidents very seriously and held detailed reviews to understand our performance and to address the deterioration in performance. From June 2018 to December 2018, we were managing our performance through our escalated management process. This has driven a number of activities to address our performance and has helped us learn some valuable lessons from this year. Further information on these lessons learned and our plans to improve our performance is provided below. In order to improve our performance for 2019, we continue to focus on proactive network maintenance, targeting hotspots, customer awareness and improving our response times and service.

Performance graph - lower is better

Category 1 and 2 pollution incidents



See page 63 of this report for an explanation of what this graph shows and the key.



Pollution categories

Serious pollution incidents are classed as category 1 or 2 by the Environment Agency. Other (or minor) pollution incidents are classed as category 3.

Overview of performance to date

Year	Units	2015		2016		2017		2018		2019	
		Target	Actual	Target	Actual	Target	Actual	Target	Actual	Target	Forecast
Pollution incidents category 1 and 2	Number	8	5	6	4	4	3	2	11	0	3
Pollution incidents category 3	Number	237	180	224	207	211	202	211	188	211	162

In the first three years of this AMP we have met the serious pollution incident target and have shown year on year improvement. Unfortunately, this trend did not continue and we did not meet our target in 2018. Category 3 pollution incidents have been below our targets for all four years in this AMP. Performance for category 3 pollution incidents has improved each year since 2016 but the latest performance is still higher than in 2015. We know we can do more to improve our pollution performance.

Investment we have made over the past year to help meet our target

- £5.7m on various Upper Quartile pollution reduction projects.

Underperformance or outperformance payment

The financial incentive only applies to Category 3 incidents. We outperformed this performance commitment and received a financial reward of £4.26m. There is not a financial incentive for serious pollution incidents. The Environment Agency is responsible for enforcing laws that protect the environment. As a result, breaches of environmental regulations can result in the company paying a fine or being prosecuted in the criminal courts. Serious pollution incidents tend to be managed through this process. During 2018 there were zero prosecutions for pollution incidents. However, it should be noted that it takes time for cases to go through the courts.

Lessons learnt and action plan

We take pollution incidents very seriously and to make sure we achieve our target, we have been in an escalated position from June to the end of the year in 2018 for pollution performance, and this has driven a number of activities to improve our year end position.

Key actions taken to improve performance in 2018 were:

- Increased wet well cleaning programme. There have been no blockage related pollution incidents on the sewage pumping stations where the cleaning programme has taken place.
- Focus on top 100 risk sewage pumping stations with asset integrity surveys being conducted to improve reliability
- Review of all alarms on risk sewage pumping stations and sewage treatment works.
- Increase of sewer network cleansing activity through the summer and focus on pollution hotspots and previous fish kill areas
- Proactive analysis of telemetry data to identify any opportunities to improve our proactive response to trends (14,000 alarm points changed)
- Commencement of process improvement programme

There were five key themes from analysis of the serious pollution incidents:

- 1. Management of Change** – changes to equipment and control philosophies contributed to the pollutions. Roll out of management of change is planned for process and pumping and engineering reliability to prevent similar incidents in the future.
- 2. Response to Telemetry** – incidents could have been prevented if there had been improved telemetry response. Within the pollution improvement plans, there is a telemetered assets project which is aiming to improve the use of telemetered data to react to trends in performance before an asset issue becomes a pollution.
- 3. Asset Visibility** – incidents occurred where there was no telemetry. As part of the pollution improvement programme, the escapes visibility stream is delivering increased investment on monitoring key assets where there has been a history of failure.
- 4. Process** – A number of root causes relate to underlying business processes. As part of the pollution improvement programme we have a stream dedicated to business process and this is focused on reducing repeat incidents and updating our pollution response and resolution processes and procedures.
- 5. Weather** – The relatively low levels of dilution in the watercourses contributed to the severity of the incidents in 6 of the 11 Category 1 and 2 incidents in 2018. Overall 13 additional incidents were identified by our data science team and were based on statistical analysis of incident run rates for the hot dry summer spell.

In 2018/2019 we proactively monitored and surveyed 181km of identified high risk areas of sewer network and circa 5200 manholes with locations close to watercourses. We have repaired 521 identified defects. This equates to 45 incidents saved.

Anticipated performance for year 5

Our focus for improvement has four main themes:

Predictive Capability

Installation of network visibility devices to identify potential sewage escapes before they happen – we are close to the completion of the installation of 1000 monitoring devices. The data will be going into our pollution predictor (which we currently use for combined sewer overflows) and we are procuring a new analytical platform. In the future we will have greater visibility of our pollution hotspots and be able to prevent pollutions by predicting where we will have a problem and intervening before there is an incident.

Installation of sewage pumping station rising main pressure and flow monitors will alert us to a potential problem on our rising mains – these are the cause of a number of serious pollution incidents over the last few years. We will create asset integrity reports for high risk sewage pumping stations to pro-actively identify and remove risks.

Proactive Interventions

Installation of “reach out” technology at sewage pumping stations which allows us to remotely intervene where required to avoid pump failure. These include building of new panels for the reach out capability. This means our control room can reach out to reset a pump remotely.

We are planning to survey the sewer network to identify potential incidents before they happen. 240km a year is surveyed at pollution risk locations such as sewers near watercourses and woodland areas, or where we have had hot spots for pollutions.

Repair defects – the proactive activity will continue to target high risk areas with CCTV and jetting. We have funding in place to repair defects such as collapses that are identified from the surveying of the sewer network at pollution risk locations.

In addition, we are carrying out thorough investigations at 34 rising mains where we have had a history of bursts. These investigations are identifying what is required to prevent further failure – this could be a re-lay of the main or it could be sewage pumping station improvements, or installation of new air valves.

Repeat Avoidance

Initiatives to improve our ways of working – to do this a number of our pollution response, investigation and root cause analysis processes are being reviewed. These will be put in place and communicated out to teams as part of our transformation in customer field services and process and pumping. In addition, we are recruiting new technical roles to support pollution response and investigation and increasing our support from the control room with the introduction of a 24/7 control room engineer shift.

Customer engagement campaign

Customer engagement campaign targeting our hot spot areas – this is an initiative focused on four cities in Yorkshire to engage with customers with our Wipesaur and anti-blockage campaign. In addition, to improve customer awareness of the issue of pollution, we will shortly be launching a new web page, freephone number and link to our online reporting tool. We have also developed a “spotters guide” and are aiming to get colleagues engaged as “River Rangers” to look out for signs of pollution as they are walking watercourses. Our plan is then to engage with community groups and train them up on what to spot and how to report a pollution or potential pollution.

Stability and reliability factor - waste water network	
Measure	Stability and reliability factor - waste water network
Unit	Classification: Deteriorating/Stable/Improving.
Definition	An overall assessment of long term stability and reliability for the waste water networks, based on a basket of indicators. Assessment is based on the recent historical trend of the indicators. The basket of indicators for the long-term stability and reliability factor for waste water networks contains: <ul style="list-style-type: none"> • Sewer collapses • Pollution incidents (CSO, RM, FS & SPS) • Properties flooded due to other causes • Properties flooded due to overloaded sewers, excluding severe weather • Sewer blockages • Reactive equipment failures. The measure excludes assets transferred to Yorkshire Water in October 2011, because there is not enough data on this asset base to allow meaningful analysis.
Period	Various (see sub measures).
Target	Stable at Year 4 for Year 5 outturn. Assessment subject to independent external and Yorkshire Forum for Waters Customers assurance.
Incentive	Financial incentive (underperformance payment only). Up to 10% totex for outcome calculated for Year 5 outturn.

Result: Stable

Target: Achieved

Performance summary

A basket of measures is used to give the overall assessment for this measure. There are six sub measures for this performance commitment. The overall basket is assessed as stable.

Three sub-measures are below the lower limit and below reference whilst four of the sub-measures are showing a stable or reducing trend through the AMP. The 'properties flooded due to other causes' sub-measure is significantly above reference level and also above upper limit. This is the second year that this sub-measure has exceeded the upper limit.

Investments we have made over the past year to help meet our target

- We have a regulatory obligation to deliver 71 Drainage Area Plans which will provide us with hydraulic sewer models, these can be used to identify any areas where future improvement work may be required on a waste water network. £2.2m was spent on this in 2018/2019.
- £5.7m has been spent on the refurbishment and maintenance of waste water pumping stations transferred to YW ownership in 2016.
- There is a large amount of new development in the Waverley area in Sheffield and to ensure that our waste water network can remove waste from these the new properties without any detriment to our existing customers we have invested £1.6m to provide a new sewer to reinforce our existing network.

More information on these sub measures can be found in Section 8 of this report.

Stability and reliability factor - waste water network sub measures

Sub measure	Sewer collapses
Unit	Number
Definition	Number of repairs to gravity sewer collapses.
Period	April to March
Target	Reference level = 255 High tramline = 369 Lower tramline = 141

Sub measure	Pollution incidents
Unit	Number
Definition	The number of category 1-3 unconsented and consented pollution incidents on Combined Sewage Overflow, Foul / Combined Sewer, Foul Manhole, foul rising mains, sewage pipe bridges, syphons and sewage pumping stations. Pollution incidents caused by third parties (including power outages) outside of our control will not be included.
Period	Calendar Year
Target	Reference level = 203 High tramline = 251 Lower tramline = 155

Sub measure	Properties flooded overloaded sewers, excluding severe weather
Unit	Number
Definition	The number of properties affected by flooding incidents due to overloaded sewers in rainfall events occurring more frequently than or equal to 1 in 20 years. The reported number excludes flooding in rainfall events less frequent than 1 in 20 and flooding incidents via the sewers caused by high river levels, inundation due to surface run-off or overflowing watercourses.
Period	April to March
Target	Reference level = 72 High tramline = 110 Lower tramline = 71

Sub measure	Properties flooded due to other causes
Unit	Number
Definition	The number of properties affected by flooding incidents from equipment failures, blockages or collapses (collectively grouped as other causes). This includes properties where an uninhabited cellar is the only part affected by the flooding. All properties flooded due to other causes are included where the flooding incident was caused by factors beyond the our control. A property affected by more than one incident under this definition is reported as one property.
Period	April to March
Target	Reference level = 302 High tramline = 379 Lower tramline = 225

Sub measure	Reactive equipment failures
Unit	Number
Definition	The number of works orders created reactively for sewerage network assets including sewage pumping stations
Period	April to March
Target	Reference level = 5,869* High tramline = 7,282* Lower tramline = 4,456* *Given that this is a redefined measure, this will be revisited in 2017 with further data, analogous to the 2012 review of new measures.

Sub measure	Sewer blockages
Unit	Number
Definition	Number of sewer blockages cleared.
Period	April to March
Target	Reference level = 20,695* High tramline = 22,936* Lower tramline = 18,454* *To be revisited in 2017 with five years post transfer data, analogous to the 2012 review of new measures.

Customer Outcome: We protect and improve the water environment

There are six performance commitments under this outcome.

We collect, treat and return over one billion litres of water safely back into the environment each day. Protecting and improving the water environment is of utmost importance to us.

Bathing water quality	
Measure	Number of Yorkshire's Bathing Waters that exceed the required quality standard.
Unit	Number.
Definition	A count of the number of beaches where the requirements of the EU Bathing Water Directive are exceeded, based on EA bathing water samples taken at designated bathing beaches; that is, the number of bathing waters which are good or excellent (better than sufficient).
Period	Reported by bathing season in following year.
Target	Annual commitment of 15 per bathing season.
Incentive	Reputational incentive.

Performance summary

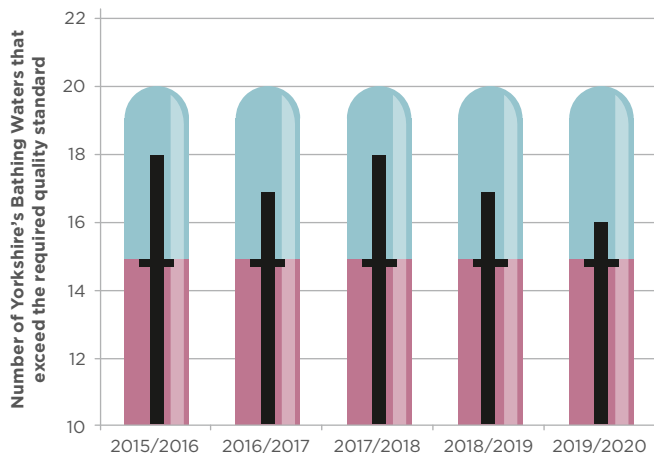
The Bathing Water performance commitment is for Yorkshire Water to achieve 15 of 19 designated bathing waters at 'Good' or 'Excellent' standard. The method of measuring bathing water quality is set out by the Revised European Bathing Water Directive (2015). The Environment Agency carry out a regulatory sample regime between 1st May and 30th September each year. These samples are tested for bacterial levels of E.coli and Enterococci. Analysis of these results by the Environment Agency on a four-year rolling average leads to a set status, based on the established limits seen in the table below. A status of either poor, sufficient, good or excellent for each designated beach is then issued in the November following the season.

Parameter	Coastal waters and transitional waters classification categories		
	Excellent quality	Good quality	Sufficient
Intestinal enterococci (cfu/100 ml)	100 (*)	200 (*)	185 (**)
Escherichia coli (cfu/100 ml)	250 (*)	500 (*)	500 (**)

(*) Based upon a 95-percentile evaluation.
 (**) Based upon a 90-percentile evaluation.

Following the 2018 bathing season there are 17 of 19 beaches at Good or Excellent.

Performance graph – higher is better



See page 63 of this report for an explanation of what this graph shows and the key.

Performance data table

Performance Commitment	Units	Actual				Forecast
		2015/2016	2016/2017	2017/2018	2018/2019	2019/2020
Bathing water quality	Number	18	17	18	17	16

Result: 17

Target: Achieved

Overview of performance to date

The 2018 bathing season has seen a reduction from 18 beaches at good or excellent to 17. Scarborough South remains poor and Bridlington South is the beach that has dropped from good to sufficient.

The reduction of Bridlington South from good to sufficient is believed, at this stage, to be related to pollutants entering via the Gypsy Race. The Gypsy Race is a winterbourne stream (dry through the summer months) that flows into Bridlington harbour. Preliminary investigations indicate that this is due to a variety of contributors; including some minor misconnections, leaching of an unlined landfill, farming practices and horses in adjacent fields. Investigation work is ongoing, and Yorkshire Water is continuing to work with the Yorkshire Bathing Water Partnership to improve Bathing Water quality beyond the minimum safe standards.

Of the eight resort beaches in Yorkshire, one will be able to apply for the coveted "Blue Flag" status in 2019. A Blue Flag demonstrates that the beach complies with a range of standards, including water quality, available user facilities, provision of information and other requirements. We have a role in ensuring these requirements are met and other organisations also play a key part in achieving this aspiration.

Underperformance or outperformance payment

This performance commitment is reputational only.

Lessons learnt and action plan

We have found that strong partnership working and sharing of data and information is essential in order to make the best use of resources. Multi-agency pre-season walkovers across the beaches has proven very beneficial. This is something that we will look to ensure are completed at every beach regardless of the water quality status from the previous season.

Anticipated performance for year 5

We are expecting to outturn at 16 out of 19 beaches at 'good' or 'excellent' for AMP 6. This reduction from the previous prediction is due to Tunstall beach not being sampled during the 2019 season. This change is the result of safety concerns in relation to access. The beach will therefore be 'unclassified' in 2019 and therefore not be counted in the total as 'excellent', as it would have previously. If we remain on track, we will outperform against our performance commitment target.

What's coming up in the future which might affect performance?

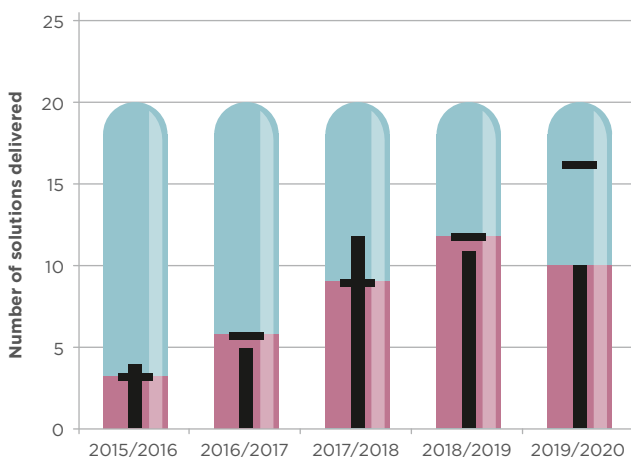
Weather events have a significant impact on bathing water quality, this is two-fold as wet weather causes storm overflows from sewers, which release untreated sewage into the environment, and also in dry-weather because the coasts see an increase in tourism and associated tourist behaviours that can impact bathing water quality. These behaviours include feeding seagulls, leaving litter which seabirds scavenge from, not using toilet facilities provided and not adhering to dog bans or cleaning up after dogs. Many of these factors come under the remit of various partners which is why we must continue to work with our partners to deliver improved bathing water results.

In order to mitigate risks, we are using the Marine Impact Model and prediction tool along with data science modelling to best understand the likely outcomes and causes. However, due to the dynamic nature of the coastal environment it is not possible to reliably predict beach outcomes years in advance. Nevertheless, probabilities of beach status's based on historic performance can be predicted.

There is also the potential for political factors, for example those around our exit from the European Union, to impact the number of people that choose to holiday in the UK rather than abroad. Boosting UK tourism brings economic benefits locally, but from a bathing water perspective can be detrimental, as is already observed by elevated samples during school holiday periods. To help lessen any effects we are looking at ways that we can inform beach goers in order to reduce their environmental impact.

Working with others	
Measure	Number of solutions we deliver by working with others.
Unit	Number
Definition	The number of intervention solutions delivered through working with multi agencies, organisations or individuals. This does not include Yorkshire Water research and development activity or any delivery by/with Yorkshire Water contractors. The intervention can be delivered through various arrangements to count for this measure, e.g. joint funding, partnership and shared resources
Period	Financial year
Target	Numeric commitment of 3 per year and 4 in the final year of the AMP.
Incentive	Outperformance payment only - calculated annually. Both annual and cumulative performance commitment must be achieved for annual reward. The target is to deliver 16 solutions by the end of year 5.

Performance graph (shows cumulative number of solutions) – higher is better



See page 63 of this report for an explanation of what this graph shows and the key.

Performance data table

Performance Commitment	Units	Actual				Forecast
		2015/2016	2016/2017	2017/2018	2018/2019	2019/2020
Working with others	Number	4	5	12	11	10

Result: 11

Target: Achieved

Performance summary

This performance commitment was established to encourage a more collaborative and outward facing approach within the company, recognising that many of the issues we face, such as flood risk, invasive species, or habitat restoration, cannot be tackled by one organisation. This performance commitment is intended to drive cultural change and encourage us to seek out ways of working in partnership to deliver better value solutions

with a greater range of benefits than our traditional investment programme for our customers. We have gradually increased the number of projects delivered in partnership since the start of the asset management period and expect to meet and exceed the target both in-year and cumulatively, as shown in the chart above.

Overview of performance to date

Since introducing this performance commitment, 35 unique partnership projects have been delivered with more than 40 different partner organisations ranging from the National Trust to smaller “friends of” groups. These projects have enabled access to specialist expertise, leveraged millions in match funding, aligned delivery across organisations to produce landscape scale improvements, empowered hundreds of volunteers, and resulted in some good value interventions. For example, by working with local authorities, we have removed 4,500 m³ of surface water from our network, reducing the risk of flooding to more than a dozen properties for less than a quarter of the usual solution cost. We have also established a Biodiversity Enhancement Fund which has allowed us to work with local volunteer groups to deliver invasive species and habitat restoration projects at a fraction of the cost of using our usual civil engineering contractors.

Our partnership projects this year (2018/2019) have mainly focused on the natural environment, working to train and empower local volunteer groups to look after rivers in their area. For example, a £23,000 contribution from Yorkshire Water has enabled the Wild Trout Trust to deliver river restoration training for 25 different angling clubs located at or near our assets. This training resulted in more than 100 volunteers improving 14km of rivers, tackling invasive species, removing barriers to fish passage and improving both in-stream and bankside habitats. This method has created a legacy of enthusiastic and empowered local volunteers who are now confident and trained in how to look after their local rivers.

Similar collaborative projects at Moss Brook, on the Wharfe, Holme, Rother and Seven rivers and in the Dearne Valley have all provided extremely good value habitat improvements by partnering with local volunteer groups and leveraging in additional funding from local wildlife and rivers trusts.

We have also partnered with British Canoeing to build a new canoe washdown facility at Thuscross Reservoir. The River Washburn is not usually suitable for canoeing, however on 30 days a year, water is released from Thuscross reservoir to create some of the UK’s best white water canoeing. This is a very popular spot with lots of people who bring their canoes and kayaks from all over the country. We wanted to make sure that canoes were not spreading invasive species from other rivers so we provided the design and build costs for the washdown facility, and British Canoeing provided the training and outreach in why and how to use it to the canoeing community.

Another partnership project we are very proud of is the work we have done with Experience Community and Natural England. Experience Community is an organisation that works to facilitate access to the countryside for people with a physical disability. Despite attempts to describe

and grade routes in the past (e.g. Miles without Stiles), our customers have found that the information they needed to access the countryside was often fragmented and inconsistent. For example, a Yorkshire Water walk around one of our reservoirs was classed as “easy access” however there was no definition of what “easy access” meant. Some of these walks had steep ascents and had rutted or loose unmade paths which make them unsuitable for unassisted wheelchair users. This project has created a route grading system (similar to that used to grade the difficulty of ski runs or climbing routes) along with video guides for four new walks. The grading system and the video guides provide much improved information about the routes, steepness and terrain. This means that people are then able to make informed choices about how, when and where they can access the countryside.

In October last year, our Living with Water partnership successfully delivered the Hullultimate Challenge, a water and resilience themed obstacle course race around Hull. Despite suffering severe floods at regular intervals, many of our customers in Hull are not aware of their flood risk nor engaged in efforts to understand or improve their resilience. The Hullultimate Challenge aimed to change this through providing a unique obstacle course race across and through the water features of Hull city centre such as the river and the docks. The race was accompanied by a Resilience Fair which aimed to engage and educate our customers on a wide range of resilience issues from financial to flooding. The event was a great success with 925 people completing the race, a significant increase in the number of households signed up to the Environment Agency’s flood warnings and thousands of children and adults engaged through the resilience fair.

Underperformance or outperformance payment

This performance commitment is reward only. Any rewards must be reinvested into more partnership working projects and must be spent within three years of earning it. We have earned an outperformance payment of £0.02m.

How do we calculate this?

The reward is calculated as 5% of the average Yorkshire Water contribution to all partnership projects, multiplied by the number of projects above target.

Lessons learnt and action plan

We are working on a process to identify and prioritise potential projects on which to spend the reward we have earned in the last three years. This work will complete in the next few months so that we can continue to deliver more projects to help our customers.

Anticipated performance for year 5

We expect to meet and exceed the target for 2019/2020 with many of our multi-year catchment restoration projects reaching completion, alongside further projects on invasive species, fish passes and other ecological enhancements. The table below shows a list of projects which we expect to claim in 2019/2020.

Project name	Yorkshire Water contribution
Gosford Valley	£46,000
Yorkshire Invasive Species Forum	£86,000
Moorlife 2020	£1,000,000
Catchment officers	£500,000
Fish passes	£45,000
Pentland Peat	£800,000
NERC student	£10,000
Esk peatland restoration	£54,000
Pennine PeatLIFE	£800,000
NY Moors Invasives	£40,000

Some ongoing partnership projects will extend beyond 2019 and others are in development now for delivery in 2020. We have joined two strategic partnerships, Common Cause with the National Trust, and Living with Water with stakeholders in Hull. Both partnerships will continue to develop and bring forward projects.

Because we have found great value in working in partnership, we will maintain and extend our activity in this area for 2020.

What’s coming up in the future which might affect performance?

The main factor that will affect the number of partnership projects we deliver are the resources allocated to identifying and delivering potential opportunities within both Yorkshire Water and third party organisations.

Whilst we recognise the benefits that can arise from partnership working, it’s important to also acknowledge that it is inherently riskier to work in partnership as the more different organisations that are involved, the more complex things can become. Different organisations have different timescales, approval processes, governance arrangements and cost benefit assessments. There may also be strict criteria about what a particular organization can or cannot fund, or when their funding must be spent, and this may not match with the needs of the partner organisation. This means it can take more time and effort to identify, develop, and deliver partnership projects than it does to work alone, which can act as a barrier.

This is why we have chosen to incentivise this way of working in order to drive cultural change within our own company, and to lead by example.

We run reputational and regulatory risks if our existing or future partnerships collapse or do not deliver as expected (e.g. catchment restoration projects have regulatory outputs which must be delivered, and our strategic partnerships have reputational expectations to meet). These risks are reviewed and managed by our team of project managers.

Visitor satisfaction	
Measure	Recreational visitor satisfaction
Unit	Qualitative
Definition	An assessment of customers' satisfaction with the current facilities, access and use of recreational sites and the recreational offer. "Recreational sites" is defined as our paths and land around our reservoirs, linking routes and paths across our land and across moorland and the facilities (for example, car parks and toilets) provided by us and available at some of these sites. Recreational offer is defined as the additional access provided to our sites (for example one off charity events) over and above the usual recreational site provision available to the public. The definition of recreational sites and recreational offer does not include any Yorkshire Water land, water or rights that has been tenanted or is owned and for which Yorkshire Water has no responsibility or control (for example, water sports clubs)
Period	Reported annually by financial year
Target	No target. Qualitative survey results to be obtained and published each year
Incentive	Reputational incentive

Result: 99%

Target: Achieved

Performance summary

We own approximately 28,000 hectares of land and manage this to protect water quality while also improving biodiversity and providing recreation opportunities.

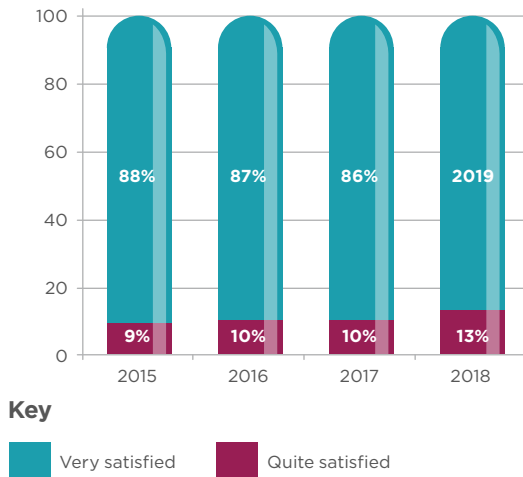
Lots of our land is open to the public and we provide visitor facilities at many of our reservoirs. We have a performance commitment to survey recreational visitor satisfaction at our sites and to publish the results with the most recent surveys reporting 99% of our visitors to be satisfied or better with their experience.

Overview of performance to date

We completed a survey at 16 different sites over the past four years, the results of the survey can be seen in the chart below.

The results over the past four years are all above 96% in achieving Very satisfied or Quite satisfied.

Visitor satisfaction



Underperformance or outperformance payment

This performance commitment is reputational only.

Lessons learnt and action plan

Each year we review the questions along with the survey sites to make sure that we can make comparisons and the diversity and regional spread of sites ensures a range of visitor experiences and communities are engaged with.

Land conserved and enhanced	
Measure	The amount of land we conserve and enhance.
Unit	Hectares (Ha).
Definition	The amount of land that we conserve and enhance, for example, Biodiversity 2020, Ancient Woodlands and SSSIs. This includes land within the region and includes both Yorkshire Water and non-Yorkshire Water land.
Period	Cumulative total to the end of AMP6 - Reported annually by financial year.
Target	11,736 hectares. The target is reflective of new obligations and maintaining previous obligations and therefore is shown as a total number of hectares of land that we conserve and enhance over AMP5 and AMP6. The target has been derived from NEP, Ancient Woodlands, SSSI and biodiversity schemes and reflects the combination of the water and wastewater commitment.
Incentive	Reputational incentive. Financial Incentive - Penalty/Reward. Calculated in Year 4 for Year 5 outturn. Reward by 2020-25 Year 1 revenues.

Result: On track to conserve and enhance 11,689 hectares of land by 2020. Cumulative area of 11,524 hectares conserved and enhanced by the end of 2018/2019.

Performance summary

With approximately 28,000 hectares of land, we are one of the three largest land owners in Yorkshire and one of the top 20 largest landowners in the UK.

We are on track with our programme of work and will deliver 11,689 hectares of conserved and enhanced land by 2020, much of which we are delivering in partnership with others. These have varied from longer term work that we have done in specific areas (for example, significant moorland restoration works with Moors for the Future, the Heritage Lottery Fund (HLF) Watershed Landscape project, natural capital ecosystem service pilot and the FLY! international Kite Festival with Pennine Prospects as well as HLF and other projects with the Nidderdale Area of Outstanding Natural Beauty) to the more focussed such as the work we are doing with Natural England to review and assess how we move our Sites of Specific Scientific Interest into favourable condition and the milestones needed to achieve that status. These projects fully align with our overall priorities and objectives for owning land as well as meeting societal objectives expressed through these stakeholder organisations. We have also joined with the National Trust in a ground breaking partnership where we are working together on a range of initiatives aligned to both organisation's strategic objectives.

Overview of performance to date

We have conserved and enhanced 11,524 hectares to date. We have continued to work in partnership with others to deliver environmental and biodiversity benefits for our customers and ecosystems. For example, we have been working with the Wild Trout Trust to undertake targeted river restoration work, and also to train local angling groups in the use of simple methods by which they can restore and strengthen the ecology in rivers across their area of interest. We continue to work with others to help improve regional biosecurity and reduce the presence of invasive species, for example, by funding training of River Holme Connections volunteers in the safe use of herbicides, leading to over 20km of river being managed at a catchment scale, upstream of our assets.

Most of our land not used for operational activities is tenanted to farmers, and we have continued to manage our farm tenancies with our "Beyond Nature" initiative delivering multiple outcomes from our land that are, tailored to each site. We now have five farms signed up covering over 3,700 hectares. Other farms will be signed up soon and we continue to attract national interest from others interested in the concept and "Beyond Nature" will be a key AMP7 performance commitment.

The company provides a wide and diverse range of recreational opportunities with open access available to much of our rural estate and over 50 clubs and organisations undertaking their activities on our land and reservoirs. We have a performance commitment to survey recreational visitor satisfaction at our sites and to publish the results, with the most recent surveys reporting 99% of our visitors to be satisfied or better with their experience. A new reception hide at Tophill Low Nature Reserve has won awards for its sympathetic and accessible design helping to underpin a year of activities that has seen the highest number of visitors to the site since it opened. We also received an 'Accessible Derbyshire' award for our work with the National Park on the "Miles Without Stiles" project that helps promote accessible routeways giving guidance as to how accessible each route is.

As part of maximising value from our operational land estate, we review land use and opportunities in accordance with our Six Capitals framework approach. We are working on initiatives that include having bio-gas converted and supplied into the national gas grid, photovoltaic solar energy for direct supply to our operational assets, off-setting of our carbon emissions and using partnership working to manage dormant operational land, for example, Sustainable Urban Drainage assets providing for water storage and ecology improvements in predominantly urban areas.

Investments we have made over the past year to help meet our target

- We are installing a fish pass at Jordan’s Dam, on the River Don, in collaboration with the Environment Agency at a cost of £1.3m in year.
- £1.3m has been spent this year at Loftsme Bridge water treatment works to fit a fish and eel recovery system on our existing intake screens.

Underperformance or outperformance payment

We are currently in the penalty deadband for this performance commitment.

Anticipated performance for year 5

We are forecasting to meet this performance commitment. In particular we will:

Sites of Special Scientific Interest (SSSI) – the expected output will be to meet our target at 98.7% of SSSI’s in unfavourable recovering status or better.

Ancient Semi Natural Woodland - the expected output will be to meet target of 75 hectares enhanced or restored.

Biodiversity – the 25 ha forecast will be claimed in year 5 of the AMP as part of the National Environmental Programme (NEP) sign off process with the Environment Agency.

Invasive species – the additional 10 ha forecast will be claimed in year 5 of the AMP as part of the NEP programme sign off process with the Environment Agency.

Fish passage – the remaining 3 ha will be claimed upon completion of works on the remaining weirs.

Gouthwaite – the NEP measure is due to be signed off in March 2020. As regulators, Natural England and the Environment Agency have been fully involved in the trial design and monitoring.

Length of river improved	
Measure	Length of river improved.
Unit	Kilometres (km).
Definition	The length of river in the Yorkshire Water region improved during 2015-2020 against WFD component measures.
Period	Total by end of AMP6 (progress reported annually).
Target	The target has been derived from the NEP programme. The total length of river to be improved by end of period is 440 km. Measurement using modelled length. This is made up of; 100km from water service component and 340km from waste water service component.
Incentive	Reputational incentive. The Environment Agency may take enforcement action, and / or use no deterioration principle. Financial incentive - Penalty/Reward calculated in Year 4 for Year 5 outturn. Reward by 2020-25 Year 1 revenues. The maximum penalty is £14m for the water service, and £49m for the waste water service.

Result: On track to improve 440km of river by 2020. Cumulative length of 39.61 kilometres improved by the end of 2018/2019.

Performance summary

We remain on track in the delivery of our programme of environmental investment which contributes to our performance commitment to improve 440 kilometres of river by 2020, this is made up of; 100km from water service component and 340km from waste water service component.

We have improved a cumulative length of 39.61km of river by the end of 2018/2019. The majority of our schemes are programmed to complete during 2019/2020.

Overview of performance to date

The Environment Agency (EA) annually completes an Environmental Performance Assessment of the water companies in England, examining performance on a range of environmental compliance matters such as pollution incidents and waste water treatment works compliance. The EA has classified our 2018 calendar year performance as 'Requires Improvement' with two out of a maximum four stars in their rating system. This change is predominantly driven by the increase in serious pollution incidents that we covered earlier in this section, along with our plans to significantly improve this year.

At end of 2018/2019 there is zero cumulative river length to report for the waste water service component. We have completed a project at Clayton West which carries a river length of 3.4km but is part of a grouping of sites (with Lundwood, West Bretton and Bolton on Dearne). Grouped sites require all sites to be delivered before any river lengths can be reported. We aim to improve 356.96km of river for the waste water service component, which is higher than the performance commitment of target 340km. We aim to deliver this improvement in 2019/2020.

For the water service component, five projects (two fish passage, three flow) were signed off by the Environment Agency as complete in 2018/2019. These all contribute a cumulative total of 39.61km towards the target to improve 100km of river by the end of 2020. It is currently forecast that 66.44km of river improvements will be completed in year 5. This will bring about a total improvement of 106.05km which is higher than the performance commitment of target 100km.

Investments we have made over the past year to help meet our target

- £42.8m expenditure in year as part of the ongoing delivery of eight schemes at sewage treatment works at: Bolton on Dearne, Stocksbridge, Dronfield, Lundwood, Leven, Cherry Burton, West Bretton and Hillam; to meet new ammonia consents.
- £42.4m of expenditure in 2018-2019 on a series of ongoing Phosphorus removal schemes at sewage treatment works at: Denholme, Wath (Ripon), Embsay, Patrington, Sherburn, Tollerton, Thornton le Dale, Easingwold, Skipton, Crayke, Leeming Bar, Borrowby, Otley, Beadle, Thirsk, Gargrave, Middleton Tyas, Earby, Thorp Arch, Wilberfoss, Foulridge, Bagby and Wetherby.

Underperformance or outperformance payment

We are currently in the outperformance zone for this performance commitment. The outperformance is calculated at £0.0767m reward per km outside of the deadband.

Stability and reliability factor - waste water quality	
Measure	Stability and reliability factor - waste water quality
Unit	Classification: Deteriorating/Stable/Improving.
Definition	An overall assessment of long term stability and reliability for the waste water quality based on a basket of indicators. Assessment is based on the recent historical trend of the indicators. The basket of indicators for the long-term stability and reliability factor for waste water quality contains: <ul style="list-style-type: none"> • Sewage treatment works non-compliance • Population equivalent % non-compliance • Reactive equipment failures
Period	Various (see sub measures)
Target	Stable at Year 4. The assessment will be subject to external independent and Yorkshire Forum for Waters Customers assurance.
Incentive	Financial incentive (underperformance payment only). Up to 10% totex for outcome.

Result: Stable

Target: Achieved

Performance summary

We have continued to deliver our programme of environmental investment and investigation needs to 2020. This programme focuses on the investment needed to improve our waste-water treatment capabilities and protect the environment. The programme also includes investigations to understand and inform future investment needs. The outcomes of these contribute to maintaining a 'stable' rating in the overall assessment for waste-water treatment stability and reliability. This needs effective long-term planning and asset management to make sure our service is resilient and sustainable. The EA report shows our overall treatment works compliance in the 2018 calendar year to be 97.5%, which is a slight reduction from our performance of 97.8% in 2017. Six of our 611 waste water treatment works did not meet their discharge permit conditions in 2017, securing 98.0% compliance. This was a slight reduction in performance compared to 2017 when we had five failing waste water works or 98.3% compliance. It is our continued aim to achieve high levels of performance and drive towards 100% compliance.

Investments we have made over the past year to help meet our target

- £4.4m has been spent in year on an ongoing scheme at Whitby sewage treatment works to address a series of risks identified on site.
- Work is ongoing at Goole Carr Lane sewage pumping station, at a cost of £2.7m in 2018-2019, to address a series of internal and external flooding risks.
- We are re-building our sewage treatment works in Beverley, to mitigate the risk of any future failures, and spent £8.5m in year on this ongoing scheme.
- We have begun work on the Huddersfield Energy and Recycling Facility, which will replace the now defunct Calder Valley Sludge Incinerator and deliver a new anaerobic digestion plant. £7.4m was spent on this scheme in year.
- We are constructing a new inlet works at Hull sludge treatment facility, at a cost of £4.1m in 2018-2019, as the existing works is in poor condition.
- We have spent £10.5m this year refurbishing our sludge treatment facility in Dewsbury to ensure that it will be fit for the future.
- The work to construct a new anaerobic sludge digester at Knostrop sludge treatment facility came to an end this year, at a cost of £11.0m in year.

A basket of measures is used to give the overall assessment for this measure. There are three sub measures for this performance commitment.

More information on these sub measures can be found in Section 8 of this report.

Stability and reliability factor - waste water quality sub measures

Sub measure	Sewage Treatment Works non-compliance
Unit	Number of failing works
Definition	The number of discharges failing upper tier, non-sanitary and look up table (LUT) consents. Sites will be deemed to be failing their numeric consents under the following circumstances: <ul style="list-style-type: none"> • Failure of WRA Lookup Table based on Calendar Year dataset • Failure of WRA Upper Tier Limit • Failure of WRA Absolute Non-Sanitary Limit • Failure to achieve disinfection for 99% of 365 days based on Calendar Year dataset • Failure of Urban Waste Water Treatment Directive (UWWTD) Lookup Table based on Calendar Year dataset • Failure of UWWTD Upper Tier Limit • Failure of Annual Average Limit for Phosphorus based on Calendar Year dataset The Urban Waste Water Treatment Directive (UWWTD) limits also allow for % removal to be taken into account so samples will not be considered as failures if the required % removal has been achieved.
Period	Calendar year measure
Target	Reference level = 0 High tramline = 8 Lower tramline = 0

Sub measure	Reactive equipment failures
Unit	Number
Definition	The number of works orders created reactively for waste water quality assets.
Period	April to March
Target	Reference level = 15,651* High tramline = 20,848* Lower tramline = 10,453* *Given that this is a redefined measure, this will be revisited in 2017 with further data, analogous to the 2012 review of new measures.

Sub measure	Population equivalent % non-compliance
Unit	Percentage
Definition	The population equivalent of the discharges failing look up table (LUT) consents.
Period	Calendar year measure
Target	Reference level = 0 High tramline = 0.6 Lower tramline = 0.0

Customer Outcome: We understand our impact on the wider environment and act responsibly

There are two performance commitments under this outcome.

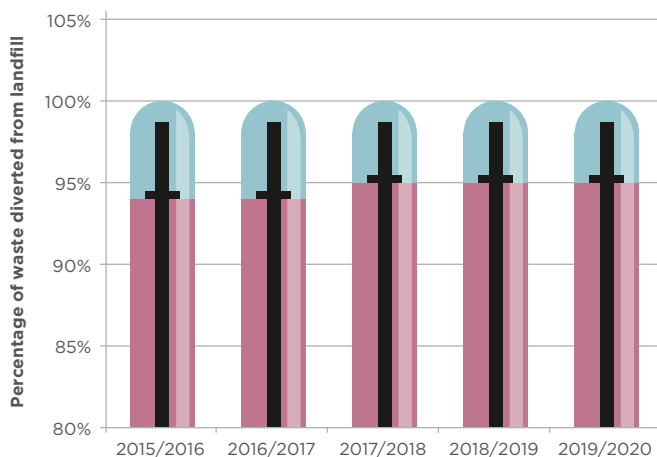
Waste diverted from landfill	
Measure	Waste diverted from landfill.
Unit	Percentage.
Definition	The amount of waste from all Yorkshire Water activities (office, operational or construction) that is recycled or re-used as a percentage of total waste produced.
Period	Reported annually by financial year.
Target	The total performance commitment for Yorkshire Water is to recycle or re-use 94-95% of its total waste, annually. Year 1-2 = 94% Year 3-5 = 95%
Incentive	Reputational incentive.

We continue to advance our work to reduce waste and find innovative ways to take more value from under-used materials and resources such as waste water, sewage sludge and our operational land. Ongoing success in our performance commitment to divert almost all our waste from landfill serves to demonstrate our strength in this area.

Our approach is based on collaborative engagement with multiple stakeholders because this enables better opportunities than working alone. We are working closely with local authorities, and community groups, universities and regional development agencies.

Our flagship resource recovery programme is progressing well at Esholt waste-water treatment works in Bradford. We are working with a range of partners on a mix of projects across the large site to deliver an exciting vision for green growth through sustainable homes and businesses that use redundant brownfield land, spare renewable heat and currently unused waste-water. In addition, recovery of redundant sludge lagoons next to the River Aire will provide benefits such as reduction in flooding and increased biodiversity.

Performance graph – higher is better



See page 63 of this report for an explanation of what this graph shows and the key.

Performance data table

Performance Commitment	Units	Actual				Forecast
		2015/2016	2016/2017	2017/2018	2018/2019	2019/2020
Waste Diverted from Landfill	%	98.9%	99.0%	99.4%	99.6%	99.6%

Result: 99.6%

Target: Achieved

Performance summary

We know that it's important to reduce waste in order to keep bills low for customers, reduce our effect on the environment and stay efficient. During 2018/2019, we have been successful in maintaining the high rates of recycling from our offices, construction sites and operational sites at 99.6%, which is better than our performance commitment to divert at least 95% of our waste.

Overview of performance to date

Waste diverted from landfill performance has improved throughout the AMP and its now at 99.6%. This is a slight improvement on last year (99.4%).

Grit

Recycling rates have remained consistent with previous years. Total waste produced has reduced by 10% this year which is positive. Work is ongoing to look for an alternative solution to grit washing which may allow more material to be recycled. There is a potential that grit could be used in the composting process.

Screenings

Waste volumes have reduced by 5% this year, though 100% of screenings are landfilled. This is an industry issue and whilst other options are being explored they remain cost prohibitive.

Incinerator Sewage Sludge Ash (ISSA)

The incinerators ran sporadically between July and October. 100% of incinerator ash was sent to landfill. We have now moved away from this sludge disposal method as we work towards 100% of sludges being treated internally through anaerobic digestion.

Skips

Waste volumes produced and recycled have increased, though recycling rates have dipped slightly. This fluctuates year on year as it is dependant on operational activity as to what is disposed of.

Clean water sludges

Volumes of clean water sludge wastes have increased as there has been a piece of work to improve the accuracy of the waste discharge meters allowing the business to better calculate the waste produced. As clean water sludges discharged to sewer are recycled this accuracy improvement has also been redefected with an increase in volumes recycled.

Asset management unit (AMU)

Waste volumes from capital investment schemes have increased as have recycled volumes. This is due to the profile of capital investment as it ramps up towards the end of the AMP. What is pleasing is that recycling rates have increased showing a sustained commitment from Yorkshire Water and its partners to avoid landfill where possible.

Repair and Maintenance (R&M)

Waste volumes produced and recycled have increased, though recycling rates have dropped slightly. Landfill avoidance is slightly lower than last year but it is on a general upward trend. Volumes will have increased as this year we have included sewer arisings for the first time. This material currently goes to landfill but work is underway to explore if permitting allows it to be washed along with the grit and therefore increase recycling rates. Leakage activity has increased by 42% in last year which will have resulted in increasing waste volumes.

Office waste

Recycling rates have reduced slightly, but total volumes have reduced significantly by 14% on the previous year.

Foxbridge – our engineering store

100% of scrap metal continues to be recycled and volumes have also reduced.

Underperformance or outperformance payment

This performance commitment is reputational only.

Lessons learnt and action plan

As recycling rates for all but 2 waste streams are above 90% (rounded), with the 3 largest waste streams all having landfill avoidance above 96% we are working to maintain this performance.

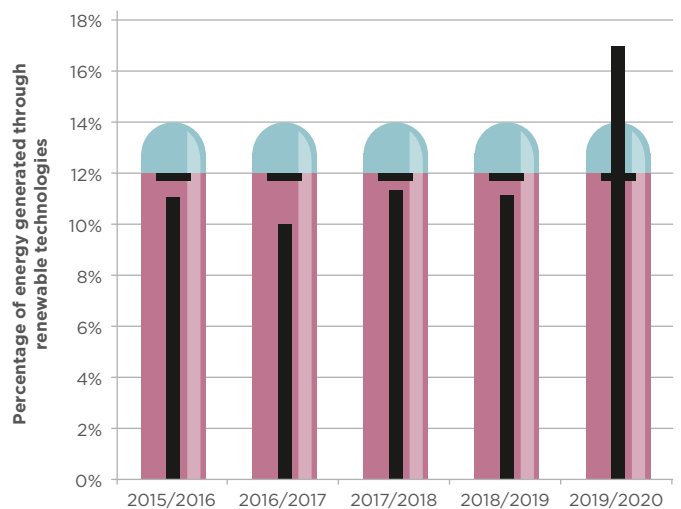
With grit we are exploring a composting opportunity which could see recycling rates increase to close to 90% which would be a significant improvement and also could drive some efficiencies in waste management costs. Our incinerators are now all closed, so this removes a waste stream which was destined for landfill.

Anticipated performance for year 5

Anticipated performance in year 5 of the AMP would be to maintain 99% landfill avoidance and we aim to improve recycling rates in areas such as grit, site skips and office waste.

Energy generation	
Measure	Energy generated through renewable technologies.
Unit	Percentage.
Definition	The amount of energy (electricity) Yorkshire Water generates through its renewable technology expressed as a percentage of total energy consumption.
Period	Reported annually by financial year.
Target	The total performance commitment for Yorkshire Water is to generate 12% of its total energy use, annually.
Incentive	Reputational incentive.

Performance graph – higher is better



See page 63 of this report for an explanation of what this graph shows and the key.

Performance data table

Performance Commitment	Units	Actual				Forecast
		2015/2016	2016/2017	2017/2018	2018/2019	2019/2020
Energy generation	%	11.3%	10.4%	11.4%	11.3%	17.0%

Result: 11.3%

Target: Not achieved our target of 12%

Performance summary

Electricity accounts for approximately 64% of our operational emissions and is one of our largest operating costs. We work to minimise our electricity consumption and maximise our self-generation of renewable energy.

Our consumed electricity increased in 2018/2019, from 598 gigawatt hours (GWh) to 620GWh from the previous year. We work hard to minimise our electricity consumption and to maximise the amount of energy we generate. 2018/2019, has seen a 4 year high with over 70GWh being generated. Despite excellent self-generation performance, a dry winter and warm summer resulted in an increase in consumption. To make sure supply and demand was maintained, energy intensive resilience plans had to be put in place, such as the use of river extraction to allow reservoir stocks to be replenished.

Esholt (our second largest sewage treatment and bioresource facility) has seen a significant improvement, seeing a 200% increase from 2016/2017 to 2017/2018 from 5.1GWh-15.4GWh, with a further 22% increase in 2018/2019 to 18.08GWh.

Energy generation performance was steadily increasing with the commissioning of the new digestion facility in Leeds (Knothrop Sewage treatment works (STW)), with other large combined heat and power (CHP) sites beating their target. However, despite a high annual outturn of over 70GWh, the highest in 4 years, it was not enough to offset the increase in consumption. The result of a dry winter and warm summer mean that our clean water assets had used 61GWh more energy than we had planned.

Overview of performance to date

It is expected that the 12% target will be achieved in 2019/2020 following the recent performance of Knothrop sewage treatment works (STW). We are also developing a framework contract for the supply of solar power to several Yorkshire Water sites.

We continue to grow our long-term energy generation capacity towards our aim of 17% by 2020.

Investment we have made over the past year to help meet our target

- A series of smaller projects designed to identify and maximise energy saving opportunities totalling £0.5m

Underperformance or outperformance payment

This performance commitment is reputational only.

Anticipated performance for year 5

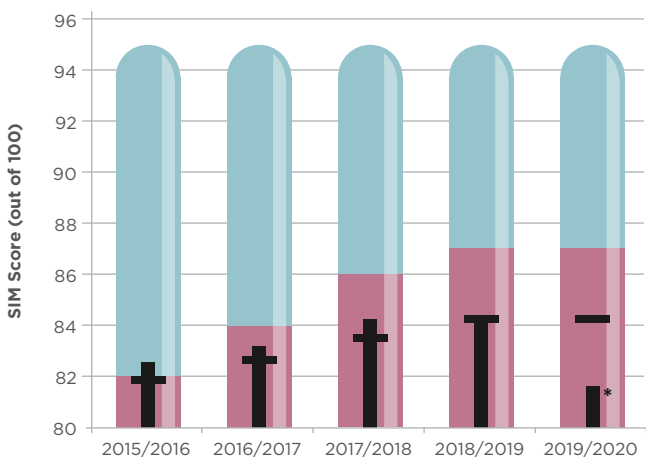
With the new bioresource facility at Knothrop STW coming online it is expected that self-generation will be above 12% throughout the year and into AMP7. This will be enhanced further when our anaerobic digestion facility at Huddersfield becomes fully operational which will also enable the permanent closure of our remaining sludge incinerators. We are also embracing solar power and have recently completed the installation of solar panels on one of our offices as part of our programme to create an exemplar site. We are developing a framework contract for the supply of solar power to several Yorkshire Water sites.

Customer Outcome: We provide the level of customer service you expect and value

There are three performance commitments under this outcome.

Quality of customer service (SIM)	
Measure	Service Incentive Mechanism (SIM) score – qualitative.
Unit	Number out of 100.
Definition	The level of customer concern with company service and how well the company deals with them. The Ofwat measure of customer service satisfaction – SIM.
Target	Improve on last years performance (>83.4)
Period	Financial year.
Incentive	Reputational and financial incentive. Penalty/Reward is calculated annually.

Performance graph – higher is better



See page 63 of this report for an explanation of what this graph shows and the key. *SIM measure is being replaced. The forecast performance for 2019/2020 is based on a proxy calculation.

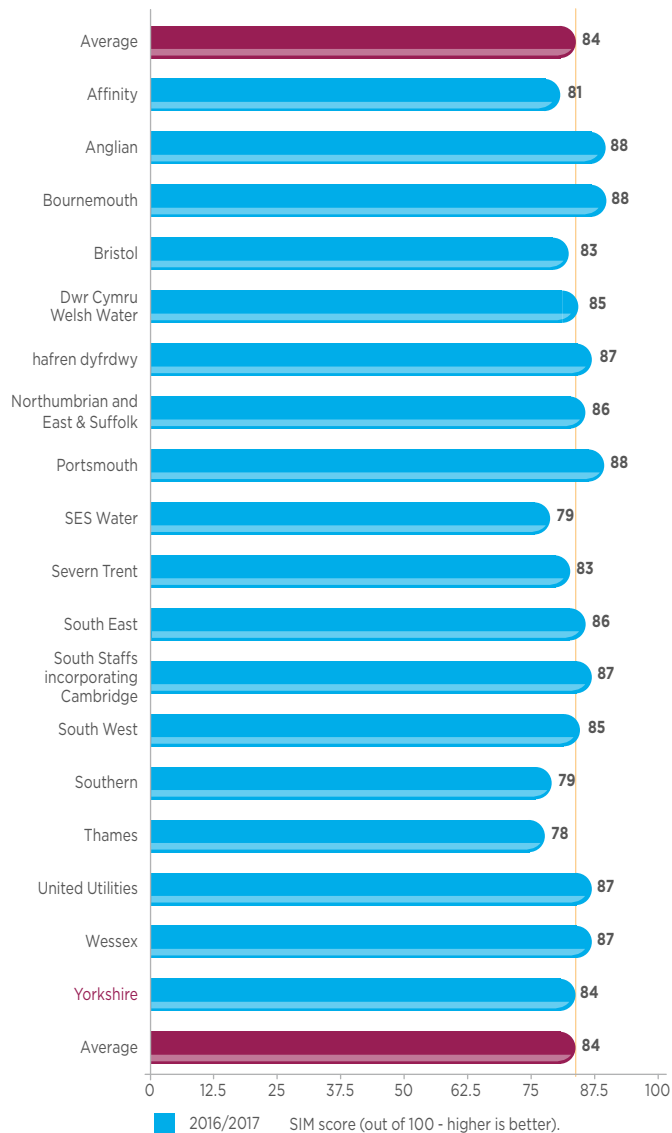
Performance Commitment	Units	Actual				Forecast
		2015/2016	2016/2017	2017/2018	2018/2019	2019/2020
Quality of customer service (SIM)	Score	82.6	83.4	84.3	84.0	Improve from 84.0

Result: 84.0

Target: Not achieved, score needed to be greater than 84.3.

How did we compare with other water companies?

Ofwat measures the customer service that water companies provide using a measure called SIM. It is scored out of 100 and a higher score is better. The chart below, taken from the Discover Water website compares our SIM score against other water companies for 2017/2018. This year we have had a slight reduction in our performance from 84.3 to 84.0.



When we compare this with all companies for last year we can see that we have achieved average company performance. We expect to do better for our customers to drive up the standards again in future years through faster resolution of issues.

Source: Discover water - discoverwater.co.uk/customer-experience-rating

Performance summary

The performance commitment is the Service Incentive Mechanism (SIM) introduced by Ofwat in 2010. The overall SIM Score is based on qualitative (75%) and quantitative (25%) elements. The qualitative score is produced from surveys carried out with customers (800 a year) who have had contact with us within a defined period. The survey asks several questions with the key one that the results is based on an overall satisfaction question, scored 1 to 5 (5 being very satisfied). The quantitative elements look at the number of written complaints received and at what stage of the complaints procedure they were as well as “unwanted” contacts (when customers have to call us). These elements are combined to give an overall SIM score out of 100.

In 2018/2019 we have seen a slight decrease in our overall score. Our overall SIM score means we have not achieved our performance commitment which is to improve year on year.

Overview of performance to date

Our performance this year is under target and we have not achieved our performance commitment.

We are disappointed with the overall SIM score performance. We have seen significant reductions in the numbers of unwanted telephone contacts, written complaints and escalations. We know that our slight decrease in performance can be attributed to the annual customer experience satisfaction survey score, which at 4.38 is slightly lower than the score of 4.42 achieved for 2017/2018. We have looked into the reasons for this and we know that the survey was influenced by higher than usual numbers of mains bursts caused by long spells of dry weather during summer 2018, which affected resolution times and keeping customers informed.

Our Customer Promise is to get things right first time, be easy to deal with and be helpful and friendly. Whilst we have not met our performance commitment we have demonstrated that we are achieving this through our continued reductions in the volume of written complaints received, particularly repeat complaints as well as a continued reduction in “unwanted” contacts.

Underperformance or outperformance payment

This performance commitment is reputational only.

Anticipated performance for year 5

As of the 1st April 2019, the SIM measure has been replaced with a new measure called the customer measure of experience (C-Mex) in 2020. C-Mex is a mechanism to incentivise water companies to provide an excellent customer experience for residential customers, across both the retail and wholesale parts of the value chain.

However, for those companies that have a performance commitment linked to SIM, Ofwat has provided a proxy calculation. To forecast our performance in 2019/2020 we have used the Customer Service C-Mex pilot score as the qualitative element. For the quantitative element we have used the actual unwanted call numbers and written complaints numbers as reported in 2018/2019 as a base measure of our performance, the aim being to improve on this in 2019/2020.

Our forecast for 2019/2020 is 81.51 based on the results below:

	2018/2019 volumes
Unwanted calls	126,600
Complaints	3,623
Escalated complaints	90
CCWater investigations	0
C-Mex customer satisfaction pilot score	7.98
Total SIM points	81.51

What’s coming up in the future which might affect performance?

There will be a new methodology used for the final year of the AMP and we have no base data to use until the new methodology is implemented.

Overall customer satisfaction	
Measure	Overall customer satisfaction.
Unit	Percentage.
Definition	The reported value for overall customer satisfaction determined by the Annual CCWater Tracking Survey.
Target	Average of 2015-2020 performance to be better than average of 2010-2015 performance. Reported annually, performance commitment to be assessed at Year 5.
Period	April to March.
Incentive	Reputational incentive.

Result: 95% (Water), 88% (Waste water)

Target: On track

Performance summary

Each year the Consumer Council for Water carry out a perception survey with a representative sample of households in England and Wales for their views and experience of their water, sewerage services and related charges. A variety of questions are asked, and we use four of them as a measure of customer satisfaction. The standard is 200 interviews per year but we boost the sample to obtain 400 interviews. Our performance commitment target is to achieve better than average this period compared to the AMP5.

The latest results for Yorkshire Water show high levels of overall customer satisfaction: 95% for water services and 88% for waste water services. We are still on track to achieving our commitment to improve performance on average between 2015-2020.

Performance summary

The result for 2018/2019 is 95% for water and 88% for sewerage.

	2015/2016	2016/2017	2017/2018	2018/2019
Customer satisfaction for water	95%	93%	94%	95%
Customer satisfaction for waste water	92%	91%	89%	88%

For the satisfaction with water measure the average score this AMP is better than the average score in the previous AMP. However, the satisfaction with sewerage measure is on average lower than the previous AMP. We manage waste water complaints well once they occur, but we need to respond to issues resulting from operational issues faster to restore service. A Waste Water Customer Field Transformation Programme in 2019 will help deliver first time resolution and faster response times for our customers. As a result, we expect to see increased satisfaction with sewerage related services.

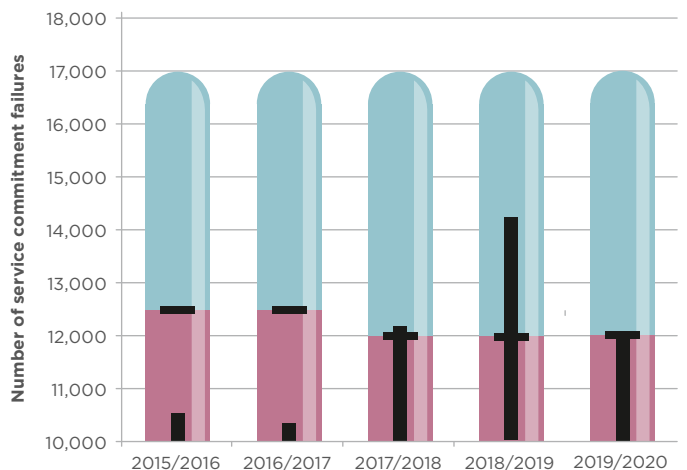
When combining the two we need to achieve 92% in the final year of the AMP to achieve the performance commitment target.

Underperformance or outperformance payment

This performance commitment is reputational only.

Service commitment failures	
Measure	Number of service commitment failures.
Unit	Number.
Definition	The total number of GSS (Guaranteed Standards of Service) events, including enhanced GSS events. Excludes company customer charter events/payments.
Target	Average of 2015-2020 performance to be less than the average of the last 3 years of 2010-2015. Reported annually, performance commitment to be assessed at year 5.
Period	Financial year.
Incentive	Reputational incentive.

Performance graph – lower is better



See page 63 of this report for an explanation of what this graph shows and the key.

Performance data table

Performance Commitment	Units	Actual				Forecast
		2015/2016	2016/2017	2017/2018	2018/2019	2019/2020
Service commitment failures	Number	10,567	10,356	12,203	14,221	12,000

Result: 14,221

Target: On track

Performance summary

By law, we have to meet specific minimum standards for customer service, such as meeting appointment times. This is called the guaranteed standards of service (GSS).

The number of failures this year is 14,221 which is higher than last year.

Whether an event is a failure is based on the GSS regulations. The elements included and whether it is just GSS or whether there is enhanced GSS (GSS criteria shown in brackets), is as follows:

- Appointments not made properly (GSS only)
- Appointments not kept (GSS only)
- Incidences of low water pressure (GSS only)
- Incorrect notice of planned interruptions to supply (GSS only)
- Supply not restored (GSS)
- Written account queries and requests to change payment arrangements not actioned on time (GSS & EGSS)
- Written complaints not actioned on time (GSS & EGSS)
- Properties sewer flooded internally (GSS)
- Properties materially affected sewer flooded externally (GSS)

Overview of performance to date

We had 14,221 failures this year which is higher than previous years, however we are still on track to meet this performance commitment (for our average 2015-2020 performance to be less than the average of the last three years of 2010-2015). To achieve this performance commitment, we need to achieve 15,390 or less in the final year.

There are two key areas that have impacted the higher outturn than expected this year:

- Supply Interruptions
- Internal Sewer Flooding

We have seen an increase in the number of properties affected by an interruption to their water supply for longer than planned. This has been due to the weather patterns experienced in the year. In the summer, an extended hot and dry period resulted in an increase in volume of network failures. These failures were caused by several factors, including increased demand, a significantly reduced soil moisture deficit leading to ground movement and burst mains. There was also increased activity on the network by Yorkshire Water and our service partners.

Underperformance or outperformance payment

This performance commitment is reputational only.

Customer Outcome: We keep your bills as low as possible

There are three performance commitments under this outcome.

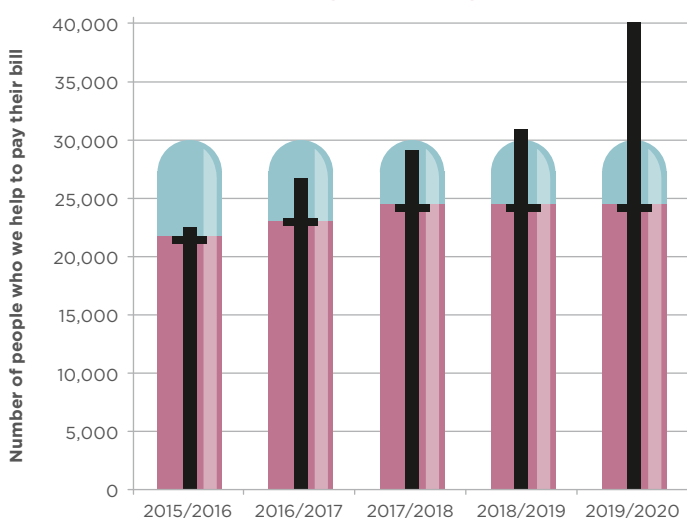
Number of people who we help to pay their bill	
Measure	Number of people who we help to pay their bill.
Unit	Number.
Definition	Number of customers who are assisted to pay their bill. This includes, but is not limited to, Water Sure, Resolve and the Community Trust, plus the number of those who take up a water meter as a result of targeted advice following identification of an affordability issue (customers should not be double counted).
Period	April to March.
Target	Reported annually, performance commitment to be assessed at Year 5. Average of 2015-2020 performance to be less than average of 2010-2015 performance. Aim to increase the number of people who are helped.
Incentive	Reputational incentive.

Performance summary

We recognise that many customers are struggling with the cost of living. Our customer bills are some of the lowest in the country and we are committed to keeping them low. We have capped our bill price rises to the Retail Price Index (RPI) each year until 2020. Our average joint water and waste water bill in 2018/2019 was £387 compared to an industry forecast average of £407. We will continue to make sure any rises in our average joint water and waste water bill are no more than the value of the RPI.

This performance commitment refers to all customers we provide financial support to through one of our support schemes. There are two social tariffs, WaterSure and WaterSupport, as well as FreshStart, Resolve, Community Trust, and Debt Settlements for those customers in debt with their water bill. In addition, for customers in debt, we may support by offering a water meter if this would benefit them financially.

Performance graph – higher is better



See page 63 of this report for an explanation of what this graph shows and the key.

In 2018/2019 we have seen an increase in the number of customers who are on the schemes, reflecting the continued effort to promote the various schemes that fall under this performance commitment. This is a trend we expect to see continue.

Overview of performance to date

This has seen an increase year on year throughout the AMP both in the number of schemes available, as well as the number of customers benefitting from those schemes.

Of all the schemes, WaterSupport, a social tariff aimed at customers with low incomes, has the largest number of customers, at approximately 16,000.

The debt management schemes, although grown in numbers, is not reflective of the demand as there is a finite amount of financial investment available for these schemes – this recognises our priority for also keeping all customer's bills affordable.

Performance data table

Performance Commitment	Units	Actual				Forecast
		2015/2016	2016/2017	2017/2018	2018/2019	2019/2020
Number of people who we help to pay their bill	Number	22,735	26,902	28,853	31,606	40,000

The comparative growth from last year represents the promotional activity undertaken to raise awareness of the affordability support available. Additionally, the introduction of FreshStart in 2018/2019 increased the volume of customers supported by approximately 600. This scheme was introduced in recognition of customer's struggling with debt on debt.

Result: 31,606

Target: Achieved

Underperformance or outperformance payment

This is a reputation measure with no financial incentive.

Lessons learnt and action plan

The continuing increase in customers supported has confirmed that there is a need for financial support across our customer base. Customer research illustrates that the gap in customers who require support and the level of engagement stems from a lack of awareness of the support available. To raise awareness, we have increased our promotional activity, particularly through wider engagement with external organisations who are able to reach customers who may need our support the most.

Next year, we aim to support more customers than ever before. We are growing our teams to make sure we fully support these additional customers.

We have ongoing continuous improvement activities and system developments to make sure we are efficient in helping as many of our customers as possible.

We will also increase the number of households receiving direct support by 2025 from our current position of 26,000 households to 83,000.

	Value	Number of customers (minus those on multiple schemes)	Forecast	Variance
Resolve Scheme	£ 2,520,383.85	4,830	5,000	-170
Community Trust	£ 905,000.82	2,207	2,102	105
Debt settlements	£ 11,463.85	93	0	93
WaterSure	£ 2,814,400.00	6,924	6,383	541
Water Support Scheme	£ 1,769,949.25	15,969	10,565	5,404
DMO	£ 131,953.00	973	1,000	-27
Fresh Start	£ 1,107,680.89	610	0	610
Total	£ 9,260,831.66	31,606	24,000	7,606

Anticipated performance for year 5

Although we have reached the performance commitment target, we are anticipating performance for the coming year to continue to grow. We aim to support approximately 40,000 customers through our financial support schemes in 2019/2020, which is a significant growth. We have planned to increase promotional activity for our social tariffs where we expect to see the biggest growth. This will be delivered through community engagement, partnership working, targeted promotion and increased transparency of support available.

What's coming up in the future which might affect performance?

We are continually developing and improving our systems which could affect the processes by which financial support is reported. We are managing this risk by engaging early with Management Information and Information Technology teams to support data reporting as part of the design.

Bad debt	
Measure	Cost of bad debt to customers expressed as proportion of bill.
Unit	Percentage.
Definition	The cost to bill paying customers to cover the cost of interest on revenue that is not collected, debt written off and debt management costs, expressed as a percentage of the average annual bill. This includes the collection and revenue activities for managing the debt.
Period	Financial year.
Target	Annual target maintained at 3.16%.
Incentive	Reputational incentive.

Overview of performance to date

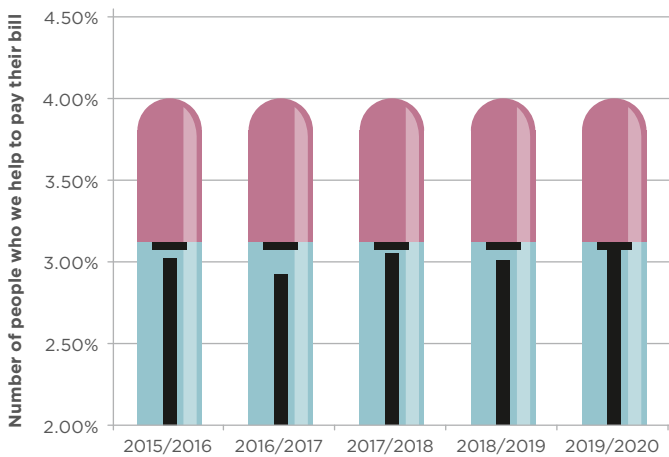
We have met the target for the last 4 years.

Year	Performance	Target	Commitment met
2015/2016	3.05%	3.16%	Target met ✓
2016/2017	2.94%	3.16%	Target met ✓
2017/2018	3.10%	3.16%	Target met ✓
2018/2019	3.02%	3.16%	Target met ✓

Underperformance or outperformance payment

This is a reputation measure with no financial incentive.

Performance graph – lower is better



See page 63 of this report for an explanation of what this graph shows and the key.

Value for money	
Measure	Value for money.
Unit	Percentage.
Definition	The reported value for Value for money determined by the Annual CCWater Tracking Survey.
Period	April to March.
Target	Average of 2015-2020 performance to be better than the average of 2010-2015 performance. Reported annually, performance commitment to be assessed at Year 5.
Incentive	Reputational incentive.

Result: 77% (Water), 79% (Waste water)

Target: Achieved

Performance data table

Performance Commitment	Units	Actual				Forecast
		2015/2016	2016/2017	2017/2018	2018/2019	2019/2020
Bad debt	%	3.05%	2.94%	3.10%	3.02%	3.16%

Result: 3.02%

Target: Achieved

Performance summary

We run a range of schemes to help customers who genuinely cannot afford to pay their bills and we have strong processes in place for managing debt for those who choose not to pay their bills. In 2018/2019 we met our performance commitment (to make sure that the cost to customers of bad debt was kept below 3.16% of the average bill). We maintained our leading approach to managing debt. The cost of debt was 3.02% of the average bill in 2018/2019.

Performance summary

Each year, the Consumer Council for Water (CCW) survey water customers about perceived value for money. Our performance commitment target is to achieve better than average this period (2015-2020) compared to the last three years of AMP5. The target this year was to achieve 67% for water and 67% for waste water.

Latest results show that 77% of customers agreed our water service was “value for money”, and 79% for our waste water service. We are pleased to be achieving our performance commitment to improve average satisfaction scores this AMP compared to the last one, for both water and waste water services. As last year, our scores are above the industry average.

Overview of performance to date

	2015/ 2016	2016/ 2017	2017/ 2018	2018/ 2019
Value for money for water (%)	82	79	76	77
Value for money for waste water (%)	83	82	79	79

Our performance for both water and waste water is better than the average score in the previous AMP.

If we continue to perform at this level the performance commitment will be achieved.

Underperformance or outperformance payment

This is a reputation measure with no financial incentive.

5.

**Our process to
provide information
that can be trusted**

In this section

01.

In this section we explain what assurance is, how it works and why it matters. Then we summarise our assurance process and how we apply assurance to our data and our publications.

02.

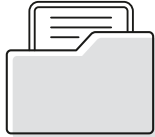
Next you will find a summary of the Assurance Plan that we put in place to assure this APR.

03.

We then provide you with a summary of our targeted areas of assurance. Our targeted areas are those that are important to you or are considered a higher risk and require more assurance. We identified these targeted areas through our risks, strengths and weaknesses process. This part of our report provides a summary of why they are targeted areas, the assurance we have completed over the year and our key assurance findings.

04.

Finally, we provide a summary of our audit findings. External independent assurance is applied to this APR. Deloitte carry out an audit on our financial information. Jacobs carry out audits on our performance commitments and supporting information as well as other information within the report.



What is assurance?

Assurance is a process aimed at giving confidence in the information we publish.

Assurance is how we check the information to make sure that our publications are accurate, accessible and easy to understand.



How does it work?

We have assurance teams to ask questions and challenge the information so that we can rely on it.

To do this in Yorkshire Water, we have an Assurance Plan.

The assurance plan shows you how we check and review our information to make sure that what we publish is correct and meets everyone's needs.

We follow this assurance plan over the year and report on our key findings.



Why does assurance matter?

It is important that you can be sure of the quality of the information we publish so that you have trust and confidence in us and how well we are doing in delivering the promises we made to you.

Our assurance process

Our Board is accountable for the quality of the information that we publish.

We apply assurance to our data and our publications. We have data assurance processes in place to make sure the data contained within our publications is accurate. We have a wider assurance process in place to make sure that our publications meet any regulatory guidance and are accessible and easy to read.

Our assurance is risk-based and uses a method called 'three levels of assurance'. This is best practice and makes sure that our assurance activities are proportionate to the level of risk of error associated with the information or publication.

Our annual performance reporting process is certified to the Quality Management System standard ISO9001:2015. We apply the principles of this standard to the assurance processes for our other publications.

The process we follow to get our data and publications assured and published includes:

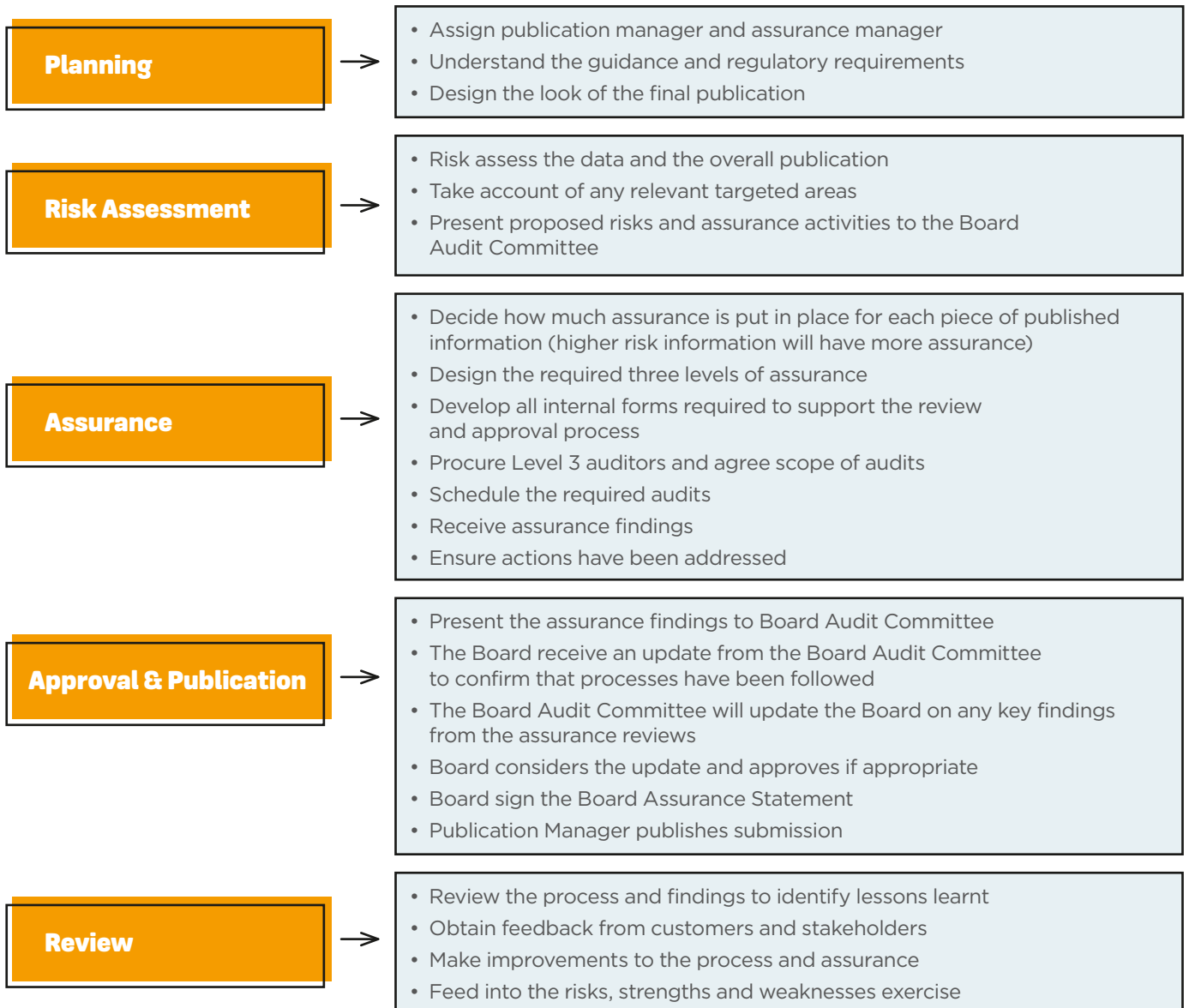
1. Planning and understanding the requirements.
2. Risk assessing the publication and the information within the publication.
3. Developing an assurance plan and completing the audit programme.
4. Approval and publication.
5. Review.

The diagram on the following page summarises the process that we follow to get our data and publications assured and published. We then provide more detail on each of these steps in our assurance process.

Steps



Activities



1. Planning

We assign a publication manager and an assurance manager to each publication. These roles are responsible for understanding the guidance and any rules around the information that is required.

They are responsible for delivering the publication to the necessary timescales. They decide how the final publication looks and they make sure we have all the people necessary to provide the information required.

2. Risk Assessment

Annually we publish a statement that details our risks, strengths and weaknesses in our reporting. We gather information from a variety of sources to understand the risks, strengths and weaknesses in the information we publish and how we report it. We use the information gathered to identify areas that will need more focused assurance. **We call these our targeted areas.**

You can view our current risks, strengths and weaknesses statement here:

www.yorkshirewater.com/media/1406/yorkshire_water_risks_strengths_weakness_statement_oct_2018.pdf

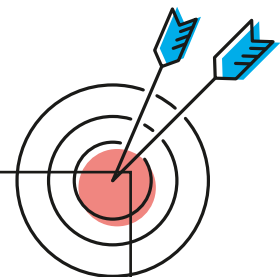
The publication manager and the assurance manager carry out a risk assessment of the publication and the information within the publication. They take account of any relevant targeted areas as part of this risk assessment.

Not all data is the same. We recognise that we need to give you greater confidence in the areas that present a bigger risk or are important to you.

All our information is checked to make sure it is accurate and meets your needs. This will happen whether the information is considered higher risk or not. The high-risk information just has more assurance overall.

In terms of reporting, risk is defined as an uncertain future outcome that, if it happens, will have a negative effect on the quality of the information in our reports. A risk is assessed by the probability of a mistake happening and, on the effect, should it happen.

Managing risk is important to us. Our assurance aims to manage any risks which would harm the confidence you place in us or in our published information.



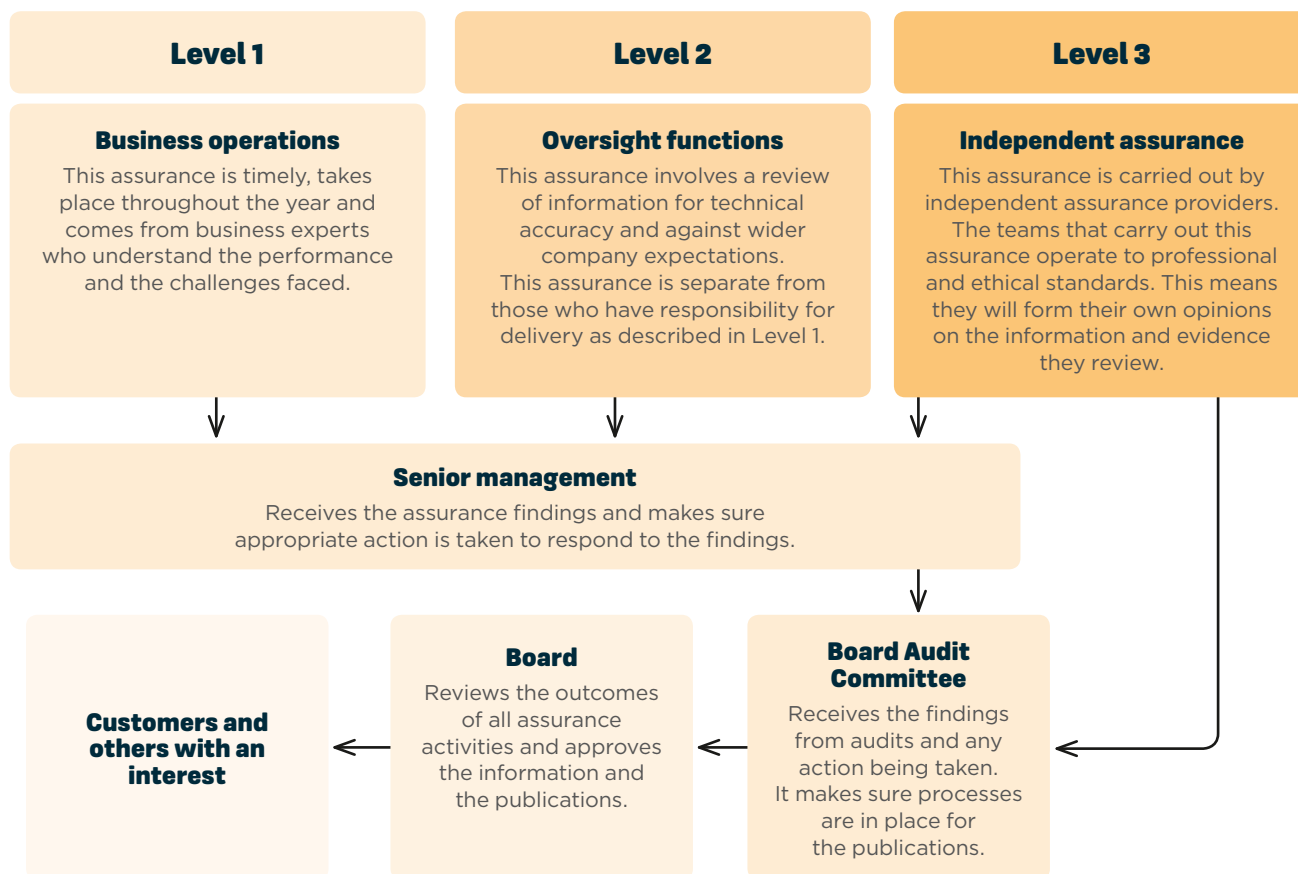
The areas where we apply more assurance

- Where we exceed our commitments and want to make sure this continues.
- Where there are financial rewards and penalties involved in the performance commitments (Ofwat call this outperformance and underperformance).
- Where we have to gather lots of information for our publications.
- Where we rely on other people and other companies to provide information for our reports.
- Where there is change inside or outside the organisation.
- Where we forecast that we will not meet our commitments or where we did not meet them in the previous year.

3. Assurance Plan & Audit Programme

We risk assess each publication to decide how much assurance we need to put in place. The higher risk information will have more assurance overall. Our assurance comes from several sources and is a year-round activity.

We use the three levels of assurance and apply this to our reporting. By putting our assurance into three levels, we make sure that we apply the right amount of assurance at the right time. Our three levels of assurance is shown in the diagram below.



The assurance manager ensures that the overall publication and the information contained within it is fully assured. Some lower risk information will be assured to Level 1 and Level 2 only. Any areas identified as targeted areas for assurance, or considered higher risk based on the previous risk assessment, has Level 3 assurance applied. The assurance plan is approved by the publication manager and by the Board Audit Committee.

The assurance manager puts in place processes for Level 1 and Level 2 assurance reviews and approvals. The assurance manager will appoint the external auditors for Level 3. Based on the risk assessment, the assurance manager will work with the auditors to ensure all relevant information is audited. This will be put into a plan. Progress against the plan will be reviewed regularly. Any actions arising from audits will be completed.

The results of our performance are presented to the Yorkshire Forum for Water Customers (the Forum). Our technical assurance providers, Jacobs, attends the Forum to present its views on our performance. The Forum has the opportunity to challenge us on our performance and how we are delivering against our commitments.

4. Approval & Publication

The overall Annual Performance Report and the supporting Performance Summary are presented to the Forum. The Forum has the opportunity to review whether the publication is accessible and easy to read as well as challenging us on our current performance.

The findings from all of the assurance reviews and any reports from the auditors are collated and presented to the Board Audit Committee.

The Board Audit Committee receive the findings from the audits and any action taken or being taken. The independent assurance providers report directly to the Board Audit Committee. This provides independence over the people managing the publication.

The Board Audit Committee ask questions of the publication manager, assurance manager, other senior managers involved and the independent assurance providers.

This allows the Board Audit Committee to understand whether the processes in place have been followed and to understand any matters arising out of the audits and assurance reviews. The Board Audit Committee provide an update to the Board.

Our Board is accountable for the quality of our information. They own and approve the publication. To do this, they seek confirmation from the Board Audit Committee that the processes have been followed. If satisfied, the Board sign the Board Assurance Statement.

This approval gives the Publication Manager the authority to publish the publication.

5. Review

After we have published our information, we review the process that we have followed. We also review the assurance findings and any queries we received on the publication. This helps us to identify the lessons we learned for things we need to keep doing or things we need to improve on for future publications. We make sure we take action to continually improve our reporting processes.

We consult with our customers and stakeholders on some of our publications to find out whether they agree that the overall publication is easy to read and understand and to find out whether it meets their needs.

We feed all our findings into the next risks, strengths and weaknesses exercise to help us identify the areas that will need targeted assurance.

Our assurance plan for the Annual Performance Report

The data and supporting text that is contained within our Annual Performance Report (APR) is subject to the assurance process detailed on the previous pages. We employ Deloitte and Jacobs to provide independent external assurance on the APR. The table below summarises the assurance plan for each of the key sections within the APR.

Section of the APR	Content	Assurance Plan
Regulatory Financial Reporting	This contains our financial statements, including our profit and loss statements, cash flow, income statement and net debt. The tables are reconciled to the Yorkshire Water statutory accounts. The information is provided in Tables 1A to 1F.	<p>Level 1: Throughout the year, accountants monitor and manage the costs within our business. For the publication, we have named data providers and data managers who are responsible for providing accurate information in line with any guidance provided.</p> <p>Level 2: Throughout the year, we have management oversight of the accountant's activities. This includes monthly reviews of information. For the publication, we have named senior managers and directors who review the information provided and undertake reconciliation activities. The publication manager also ensures that information is provided in line with requirements.</p> <p>Level 3: Deloitte is appointed as our external independent financial auditors. Every year Deloitte review the preparation of our accounts against the regulatory accounting guidelines and complete a cross reference to our statutory accounts.</p>
Price Review and other segmental reporting	This contains further detail on our revenue and costs, to allow you to review the companies' performance against final determinations. Revenue and costs are split between the price controls and revenue is split further down by customer type. The information is provided in Tables 2A to 2J.	<p>Level 1: We have named data providers and data managers who are responsible for providing accurate information in line with any guidance provided.</p> <p>Level 2: We have named senior managers and directors who review the information provided and undertake reconciliation activities. The publication manager ensures that information is provided in line with requirements.</p> <p>Level 3: Deloitte is appointed as our external independent financial auditors. Every year Deloitte review the preparation of our accounts against the regulatory accounting guidelines and complete a cross reference to our statutory accounts. Jacobs also provide assurance of the non-financial information in this section.</p>

Section of the APR	Content	Assurance Plan
Performance Summary	<p>This contains information on our performance against the performance commitments and whether any financial incentives have been accrued in the year. This section provides a forecast on our performance to 2020. The information is provided in Tables 3A to 3D.</p>	<p>Level 1: Throughout the year, the Board monitors performance against our commitments on a monthly basis. We have Delivery Assurance Groups who review and amend the delivery plans as required. For the publication, we have named data providers and data managers who are responsible for providing accurate information in line with any guidance provided.</p> <p>Level 2: Throughout the year, we have management oversight of the performance reporting activities. For the publication, we have named senior managers and directors who review and approve the information provided. The publication manager ensures that information is provided in line with requirements.</p> <p>Level 3: External independent assurance is provided by Jacobs on the delivery plans in place for the performance commitments and to confirm that the data presented in the publication was accurate. Extra scrutiny is provided on a number of our performance commitments, as per our targeted assurance plans.</p>
Additional Regulatory Tables	<p>This section provides additional information including accounting policies, totex (total operating expenditure) analysis and financial metrics. This information is presented in Tables 4A to 4W.</p>	<p>Level 1: We have named data providers and data managers who are responsible for providing accurate information in line with any guidance provided.</p> <p>Level 2: We have named senior managers and directors who review and approve the information provided. The publication manager ensures that information is provided in line with requirements.</p> <p>Level 3: Throughout the year, Internal Audit have reviewed void households, metering and new connections. For the publication, Deloitte and Jacobs review the accuracy of the information presented.</p>
Risk & Compliance Statement	<p>An annual statement from the Board confirming compliance with the relevant statutory, licence and regulatory obligations for the provision of services to its customers.</p>	<p>Level 1: We have a named publication manager who ensures that the information contained within the statement is accurate and meets the reporting guidelines. Throughout the year, we have processes in place to monitor and review compliance with our relevant obligations.</p> <p>Level 2: We have named senior managers and directors who review and approve the statement.</p> <p>Level 3: Jacobs has undertaken a review of the Risk and Compliance Statement to review the processes that support the declarations in this statement.</p>

The table below sets out each data table within the APR and shows how the independent external assurance has been provided for that area.

Table		Section	Independent Assurance
Section 1: Regulatory financial reporting			
1A	Income statement	All	Deloitte
1B	Statement of comprehensive income	All	Deloitte
1C	Statement of financial position	All	Deloitte
1D	Statement of cash flows	All	Deloitte
1E	Net debt analysis at 31 March 2019	All	Deloitte
1F	Financial flows	All	Deloitte
Section 2: Price review and other segmental reporting			
2A	Segmental income statement	All	Deloitte
2B	Totex analysis - wholesale water and wastewater	All	Deloitte
2C	Operating cost analysis - retail	All	Deloitte
2D	Historical cost analysis of tangible fixed assets wholesale and retail	All	Deloitte
2E	Analysis of 'grants and contributions' and land sales - wholesale	All	Deloitte
2F	Household - revenues by customer type	All	Deloitte provide assurance over the data within columns on wholesale charges and retail Jacobs provide assurance on the number of customers
2G	Non-household water - revenues by customer type	All	Deloitte provide assurance over the data within columns on wholesale charges and retail Jacobs provide assurance on the number of customers
2H	Non-household waste water - revenues by customer type	All	Deloitte provide assurance over the data within columns on wholesale charges and retail Jacobs provide assurance on the number of customers
2I	Revenue analysis and wholesale control reconciliation	All	Deloitte
2J	Infrastructure network reinforcement costs	All	Deloitte
2K	Infrastructure charges reconciliation	All	Jacobs

Table		Section	Independent Assurance
Section 3: Performance summary			
3A	Outcome performance table	All	Jacobs
3B	Sub measure performance table	All	Jacobs
3C	AIM (Abstraction Incentive Mechanism)	All	Jacobs
3D	SIM (Service Incentive Mechanism)	All	Jacobs
3S*	Shadow reporting of new definition data	All	Jacobs

* Table 3S and the supporting commentary are not included within the APR and are provided to Ofwat separately.

Section 4: Additional regulatory information			
4A	Non-financial information	All	Jacobs
4B	Wholesale totex analysis	All	Deloitte
4C	Impact of AMP performance to date on RCV	All	Deloitte
4D	Totex analysis - wholesale water	Lines 1-24 Lines 25-28	Deloitte Jacobs
4E	Totex analysis - wholesale wastewater	Lines 1-24 Lines 25-28	Deloitte Jacobs
4F	Operating cost analysis - household retail	All	Deloitte
4G	Wholesale current cost financial performance	All	Deloitte
4H	Financial metrics	All	Deloitte
4I	Financial derivatives	All	Deloitte
Section 4: Additional regulatory information (cost assessment data)			
4J	Atypical expenditure by business unit - wholesale water	Lines 1-11 & 22-36 Lines 12-21 & 36	Deloitte Jacobs
4K	Atypical expenditure by business unit - wholesale wastewater	Lines 1-11 & 22-36 Lines 12-21 & 36	Deloitte Jacobs

Table		Section	Independent Assurance
4L	Enhancement expenditure by purpose - wholesale water	All	Jacobs
4M	Enhancement expenditure by purpose - wholesale wastewater	All	Jacobs
4N	Operating expenditure - sewage treatment - wholesale wastewater	All	Deloitte
4O	Large sewage treatment works - wholesale wastewater	Lines 11-16 Lines 1-10	Deloitte Jacobs
4P	Non-financial data for WR, WT & WD - wholesale water	All	Jacobs
4Q	Non-financial data - properties, population and other - wholesale water	All	Jacobs
4R	Non-financial data - Wastewater network and sludge - wholesale wastewater	All	Jacobs
4S	Non-financial data - sewage treatment - wholesale wastewater	All	Jacobs
4T	Non-financial data - sludge treatment - wholesale wastewater	All	Jacobs
4U	Non-financial data - properties, population and other	All	Jacobs
4V	Operating cost analysis - water resources	All	Deloitte
4W	Operating cost analysis - sludge treatment	All	Deloitte

Note: Deloitte provide an audit opinion on Tables 1A to 1E and on Tables 2A to 2K. The audit opinion is attached within Appendix 1. All other tables audited by Deloitte are audited under agreed upon procedures.

Targeted Assurance Findings

Targeted assurance areas are areas that we have identified as being important to you or are considered to be a higher risk and therefore these have received more assurance to give you the confidence that the information we publish is correct.

We identify these areas as part of our risks, strengths and weaknesses exercise. All of these targeted assurance areas are relevant to the APR. Our targeted areas are as follows:

1. Performance commitments

We want additional focus on areas where a performance commitment target was missed in the previous year or where we forecast (at September 2018) a financial incentive reward (known by Ofwat as an outperformance).

2. Price control cost allocation

We made some mistakes in this area in our 2017/2018 reporting. We have learnt from these errors and improved our processes. Our targeted assurance delivers additional assurance to check the improvements have been made.

3. Customer understanding and awareness of the information we provide

We receive good feedback in this area, so it is one of our strengths. However, we want to ensure we continue to improve our customer understanding and awareness of our information.

4. Effect of our internal SAP programme on our reported information

Accuracy and completeness of information from our IT systems is central to the overall accuracy of the information we report to you. We are currently going through a significant update to our SAP system. Our targeted assurance will make sure that our systems continue to deliver accurate information.

5. Meeting regulatory guidance

There are two areas we want to target this year: application of principal use and calculation of average pumping head. These are areas where Jacobs raised concerns in our 2017/2018 reporting.

6. Accuracy of information

We have had some minor errors in our reported information. We want additional assurance on the areas where there is greatest risk of errors occurring.

The table on the following page summarises our targeted areas and shows why they are targeted for more assurance. Further detail then follows on each of the targeted areas in turn to provide a progress update on the actions we have undertaken.

This table provides a summary of why the targeted area has been included.

Targeted Areas	Comments	Target missed in 2017/2018 and/or forecast to be missed in 2018/2019 (as at Sept-18)	A financial incentive reward is being forecast (as at Sept-18)	Errors in previous reporting	High priority area	Internal change
Performance commitment: Drinking water quality	This continues to be a targeted area. This has been a targeted area over the last 3 years due to our failure to meet our target.	✓				
Performance commitment: Drinking water quality contacts	This continues to be a targeted area. This has been a targeted area over the last 3 years due to our failure to meet our target.	✓				
Performance commitment: Leakage	This is a new targeted area for 2018/2019 as the target was missed in 2017/2018 and was forecast to be missed for 2018/2019. Leakage is a high priority area for us and our customers place high importance on this measure.	✓			✓	
Performance commitment: Energy generation	This continues to be a targeted area. This has been a targeted area for us over the last 3 years.	✓				
Performance commitment: Category 1 and 2 pollution incidents	This is a new targeted area for 2018/2019 because we forecast that our target would be missed this year.	✓				
Performance commitment: Category 3 pollution incidents	This performance commitment target received an outperformance payment in 2017/2018 and was forecast to receive another for 2018/2019.		✓			
Performance commitment: Water supply interruptions	This performance commitment target received an outperformance payment in 2017/2018 and was forecast to receive another for 2018/2019.		✓			
Performance commitment: internal sewer flooding	This performance commitment target received an outperformance payment in 2017/2018 and was forecast to receive another for 2018/2019.		✓			

Targeted Areas	Comments	Target missed in 2017/2018 and/or forecast to be missed in 2018/2019 (as at Sept-18)	A financial incentive reward is being forecast (as at Sept-18)	Errors in previous reporting	High priority area	Internal change
Performance commitment: working with others	This performance commitment target received an outperformance payment in 2017/2018 and was forecast to receive another for 2018/2019.		✓			
Price control cost allocation	This continues to be a targeted area. This has been a targeted area over the last 3 years due to its importance and minor errors in our reporting.			✓	✓	
Customer understanding and awareness of the information we provide	This continues to be a targeted area. This has been a targeted area over the last 3 years as we wish to continue to improve.				✓	
Effect of our internal SAP programme on our reported information	This is a new targeted area. We are upgrading our SAP system. The accuracy and completeness of the information from our IT systems is central to the overall accuracy of the information we report.					✓
Meeting regulatory guidance: average pumping head	This is a new targeted area identified as part of our risks, strengths and weaknesses process following a review of the auditor findings from our last APR.				✓	
Meeting regulatory guidance: principal use	This is a new targeted area identified as part of our risks, strengths and weaknesses process following a review of the auditor findings from our last APR.				✓	
Accuracy of reporting	This is a new targeted area to pick up general improvements required across the whole of the APR to strengthen our assurance on the data reported.			✓	✓	

Targeted area 1. Performance commitments where the target was missed in the previous year or was forecast to be miss in the current reporting year

Why we included this as a targeted area

There is potentially a higher risk to the accuracy of reported information where we are close to missing or have already missed our target. The performance commitments where we missed our target or where we forecast to miss our target were:

- Drinking-water quality
- Drinking-water quality contacts
- Leakage
- Energy generation
- Serious pollution incidents

What we said we would do and the assurance that we said we would carry out.

An update on our progress and key assurance findings

To make sure our reporting is accurate, we will continue to regularly monitor how we are performing against our performance commitments. This will include a review by our Delivery Assurance Groups (DAGs) that review and challenge our monthly performance. They set corrective actions when we deviate from our targets.

Our DAGs continue to review and challenge our monthly performance and set corrective actions when we deviate from our targets.

In 2018/2019 we set up a Wholesale Board and an Upper Quartile Steering Group. The DAGs regularly report on their progress to these two groups.

We review our performance commitments at our Board Investment Committee (BIC). BIC review the impact of missing our targets and set action plans to make improvements, based on the data that is presented.

Our DAGs report to the BIC at least once per year. In addition, our outcome delivery incentives are reviewed as part of internal business planning at BIC and reviewed again for year-end reporting and forecasting. Any issues arising in the delivery of our performance commitments may involve further scrutiny from BIC in order to approve funding for improvement and/or monitor performance.

We are working with data providers and data managers to develop an automated process for capturing performance commitment data to reduce the risk of human error and mistakes.

Our data providers and data managers regularly review their reporting procedures to see how data can be further improved or automated. Our SAP upgrade has provided an opportunity to improve our data capture and reporting processes. The first phase of our SAP upgrade went live in June 2019 and the upgrade of our performance commitment data is in the next phase of our improvement programme. The relevant parts of our business community are involved in our SAP improvement programme to take advantage of this opportunity.

What we said we would do and the assurance that we said we would carry out.

Our assurance process will continue to work with the Yorkshire Forum for Water Customers (the Forum) which challenges our performance, when our targets are missed.

Jacobs, our technical auditor, will perform a detailed review of these performance commitments for the 2018/2019 APR.

An update on our progress and key assurance findings

We continue to work with the Forum to brief it on our performance commitments. Performance commitments and the APR were discussed with the Forum in June, July, August and October 2018. We briefed the Forum in May 2019 with our estimated 2018/2019 outturn performance and in June 2019 with our final audited numbers for the APR. On this targeted area we discussed leakage and pollution with the Forum in December 2018 and then provided a further update on pollution in January, February and March 2019. All the minutes of the meetings can be seen on our website:

www.yorkshirewater.com/customerforum

Jacobs has completed a detailed audit on the five performance commitments where the target was, or was forecast to be, missed. The assurance findings from Jacobs are summarised later within this report and its assurance statement is included in Appendix 2.

Next steps and action plan

We complete a review of all our reporting after the publication date to take into account any feedback or queries we receive. We use this to consider how we can continue to improve our reporting and any areas we may want to include as a targeted area throughout the following year. We proactively engage with our customers to identify the areas we will target for additional assurance to improve our reporting. We will publish our findings in our Risks, Strengths and Weaknesses Statement in the autumn.

Targeted area - 2. Performance commitments where we are forecasting a financial incentive reward (at September 2018)

Why we included this as a targeted area

Our reported data is used to calculate our rewards and must be accurate to make sure we have achieved the rewards we said we have. The performance commitments where we forecast a reward for our performance in 2018/2019 (as at September 2018) were:

- Category 3 pollution incidents
- Internal sewer flooding
- Water-supply interruptions
- Working with others

What we said we would do and the assurance that we said we would carry out.

An update on our progress and key assurance findings

To make sure our reporting is accurate, we will continue to regularly monitor how we are performing against our performance commitments. This will include reviews by our Delivery Assurance Groups (DAGs) who review and challenge our monthly performance. They set corrective actions when we deviate from our targets.

Our DAGs continue to review and challenge our monthly performance and set corrective actions when we deviate from our targets. In 2018/2019 we set up a Wholesale Board and an Upper Quartile Steering Group. The DAGs regularly report on their progress to these two groups.

We review the information that is presented on our performance commitments at our Business Investment Committee (BIC). BIC review the financial impact of missing our targets and set actions plans to make improvements, based on the data that is presented.

Our DAGs report to the BIC at least once per year. In addition, our outcome delivery incentives are reviewed as part of internal business planning at BIC and reviewed again for year-end reporting and forecasting. Any issues arising in the delivery of our performance commitments may involve further scrutiny from BIC in order to approve funding for improvement and/or monitor performance.

We are working with data providers and data managers to develop an automated process for capturing performance commitment data to reduce the risk of human error in our reporting.

Our data providers and data managers regularly review their reporting procedures to see how data can be further improved or automated. Our SAP upgrade has provided an opportunity to improve our data capture and reporting processes. The first phase of our SAP upgrade went live in June 2019 and the upgrade of our performance commitment data is in the next phase of our improvement programme. The relevant parts of our business community are involved in our SAP improvement programme to take advantage of this opportunity.

Our assurance process will continue to include work with the Yorkshire Forum for Water Customers (the Forum) who challenge our performance, where our targets are missed.

We continue to work with the Forum to brief it on our performance commitments. Performance commitments and the APR were discussed with the Forum in June, July, August and October 2018. We briefed the Forum in May 2019 with our estimated 2018/2019 outturn performance and in June 2019 with our final audited numbers for the APR. On this targeted area we discussed pollution with the Forum in December 2018 and then provided a further update on pollution in January, February and March 2019. All the minutes of the meetings can be seen on our website: www.yorkshirewater.com/customerforum

What we said we would do and the assurance that we said we would carry out.	An update on our progress and key assurance findings
<p>As part of our assurance we are planning to check the data collection process we use to collect data for our performance commitments. This will be used to confirm where the information comes from, the underlying processes and controls, and the accuracy of our data reporting to identify any opportunities to improve.</p>	<p>This is in progress and we continue to develop an oversight of assurance provided within Yorkshire Water throughout the data collection process. We have looked at the assurance to deliver data on our supply interruptions and pollution incident performance. This is part of our current work to build a new Integrated Assurance framework.</p>
<p>We will continue to meet with the Environment Agency regularly to agree on categorisation of pollution incidents and to discuss any exclusions.</p>	<p>We continue to meet with the Environment Agency where we agree categorisation of pollution incidents.</p>
<p>Jacobs, our technical auditor, will perform a detailed review of these performance commitments for the 2018/2019 APR.</p>	<p>Jacobs have completed a deep audit on the four performance commitments where we were forecasting a financial incentive reward. The assurance findings from Jacobs are summarised later within this report and their assurance statement is included in Appendix 2.</p>

Next steps and action plan

We complete a review of all our reporting after the publication date to take into account any feedback or queries we receive. We use this to consider how we can continue to improve our reporting and any areas we may want to include as a targeted area throughout the following year. We proactively engage with our customers to identify the areas we will target for additional assurance to improve our reporting. We will publish our findings in our Risks, Strengths and Weaknesses Statement in the autumn.

Targeted area - 3. Price control cost allocation

Why we included this as a targeted area

It is important that our reported information is free from error. Our experience has told us that we need to apply more rigour to the assurance we apply to areas where errors are most likely to happen. One of the areas we will target our assurance to is 'price control cost allocation'. Ofwat introduced price controls in 2014. There are currently four price controls. Cost allocation is used to divide our costs across each of these four price controls.

What we said we would do and the assurance that we said we would carry out.

An update on our progress and key assurance findings

We are meeting with our data providers and data managers who contribute to our price control cost allocations to understand our current processes, the data and our reporting methodology.

A thorough review of our processes to provide data against the price control allocations has been completed. We also discussed and compared our processes against our industry peers. Some changes to our methodology were made as a result, for example, outsourced functions that use Yorkshire Water IT systems and facilities now attract an appropriate overhead recharge meaning that the allocations will not change whether the function is outsourced or insourced. We have a detailed methodology statement that is published within our APR (see Appendix 3). This has been identified as best practice by Ofwat in their Company Monitoring Framework assessment published in January 2019.

Our review will include a detailed check and comparison with the Regulatory Accounting Guidance (RAGs) from Ofwat to understand and improve the method we use to complete price control cost allocations.

A team of three accountants undertake a review of the annually revised RAGs to understand any required procedural changes and to consider any data improvements that can be made. These are documented in a procedure document that details how the data will be provided and how it will be compliant with the RAGs. These procedures are then reviewed and approved by the Head of Finance prior to any data collection taking place.

As part of our wider assurance process we are also improving our internal sign off process so that there is an increased level of scrutiny and ownership of the data that we provide in our APR.

A review of our Level 1 and Level 2 assurance processes has taken place throughout the year. A strengthened assurance statement has been implemented to support Level 1 and Level 2 assurance review checks.

Our assurance will make sure there is sufficient checking on the financial costs which are recorded in our financial systems during the year. These are the costs that will be allocated to our four price controls for our annual reporting in 2018/2019.

Operational managers understand and document the reasons for the material cost movements between price controls year on year. Finance managers meet regularly with operational managers to discuss these costs.

What we said we would do and the assurance that we said we would carry out.	An update on our progress and key assurance findings
<p>We will make sure our finance team and managers scrutinise the cost assessments run at the end of the year so that our cost allocations accurately reflect our levels of expenditure in 2018/2019 and that our price cost allocations meet the specific Regulatory Accounting Guidelines (RAGs) guidance from Ofwat.</p>	<p>Our finance team undertake a review of the RAGs and make sure the financial data they provide is accurate and meets the guidance. They review the information from the Operational Managers on material cost movements. The summary of material cost movements between the price controls are included in our accounting methodology statement which is published in Appendix 3 of our APR.</p>
<p>Our assurance will check the cost allocation information, manual adjustments, and the assumptions we make to complete our cost assessments which will be recorded in the accounting methodology statement that we publish. This will give a full explanation of the cost allocation method we have used.</p>	<p>This has been completed and is detailed within our Accounting Methodology Statement, included within Appendix 3 of the APR.</p>
<p>We will use our independent technical auditors Jacobs and Deloitte, to review the detail of our cost allocations in our APR for 2018/2019 and provide an opinion in line with Ofwat's audit requirements.</p>	<p>Jacobs and Deloitte have completed independent assurance on our APR. The audit opinion from Deloitte is included in Appendix 1. The assurance statement from Jacobs is included in Appendix 2.</p>

Next steps and action plan

We complete a review of all our reporting after the publication date to take into account any feedback or queries we receive. We use this to consider how we can continue to improve our reporting and any areas we may want to include as a targeted area throughout the following year. We proactively engage with our customers to identify the areas we will target for additional assurance to improve our reporting. We will publish our findings in our Risks, Strengths and Weaknesses Statement in the autumn.

Targeted area - 4. Customer understanding and awareness of the information we provide

Why we included this as a targeted area

This is an area which we identified as a strength from positive customer feedback and support from the Yorkshire Forum for Water Customers, but there is always more we can do. We want to build on our strengths and continue to improve in this area. We want to continue to make sure:

- Information is easy to read and understand
- Information is easy to find
- Information published is what customers and stakeholders want and need

What we said we would do and the assurance that we said we would carry out.

An update on our progress and key assurance findings

Information is easy to read and understand

We will make sure our publications are easy to read and written in Plain English. We will continue to use Plain English to review our reports and obtain the Crystal Mark for some of our publications.

We have improved how our reports can be found on our website. The webpage showing our reports has been reviewed by Plain English Campaign to make sure it is clear, well-designed and accessible.

Over the last year, we have obtained a Plain English Crystal Mark for: our Data Assurance Summary; Summary of the Risks, Strengths and Weaknesses; Final Assurance Plan for 2017/2018 and 2018/2019; Board Statement on Company Direction & Performance; Performance Summary; and Performance at a glance.

The Yorkshire Form for Water Customers statement has also obtained a Plain English Crystal Mark for the second year in a row.

We will continue to increase the use of infographics, colour and tables to explain information in our publications. Where we can, we will test key infographics to make our information easier to understand.

We have continued to review our publications and test our publications and infographics with our customers. We have previously tested our company structure infographic with our customers. Following feedback on our Assurance Plan, we included some new infographics to aid understanding of how our assurance process is managed.

For publications that are longer than 30 pages, we will include a shorter, customer-friendly version, if this is appropriate.

We have published a Performance Summary Report alongside our APR. Over the last year, we have also published a summary of our Risks, Strengths and Weaknesses and a summary of our Assurance Plan.

We will continue to work with the Yorkshire Forum for Water Customers (the Forum) to make sure that the style, format and content of our reporting is tailored to the feedback we receive.

Through our customer engagement, we learned that our customers wanted a summary of our main publications. As the performance summary for the APR was 22 pages long last year, we worked with the Forum to understand whether a more concise performance would be easier for our customers to understand. Although there were some concerns on adding to the number of documents that we publish, it was suggested that a short one - or two-page summary would be useful and could provide an opportunity to display this through different communication channels. The Forum continue to receive the findings of customer feedback and continue to challenge us to ensure our publications are what customers want and need.

What we said we would do and the assurance that we said we would carry out.

An update on our progress and key assurance findings

Information is easy to find

We will test our website with customers using our online community and take action based on their feedback.

Our website has been tested with our customers. We asked our online community to try and find our reports page. As a result of their feedback, we amended the structure of our website to make it easier to find the information we publish. We continue to review our webpages from this perspective.

We will improve our Performance Webpage by making information available on the webpage itself rather than needing to download a PDF.

This is an improvement we made this year. Our performance commitments can now be seen directly on our website:
www.yorkshirewater.com/ourperformance

We will make our publications easier to find by mapping customer journeys on our website and redesigning our website as necessary.

As part of the improvement of our website, we looked at the volume of traffic on our webpages and the journey our customers make to find the information they have been looking for. Using this information, we have updated to our website to help customers find the information they need. We have improved our website so that all our reports are available in one place.

We will continue to optimise search engine results to make sure the most current and relevant versions of our reports are at the top of the search results.

We continue to optimise search engine results to make sure the most current and relevant versions of our reports are at the top of the search results.

We will continue research into the ways we engage with you, including social media, our website, blogger engagement, traditional media and email.

Our ongoing customer research recognises that our customers lifestyles are changing, and therefore the way they expect to contact us and be contacted is changing with it. They expect to be able to contact us 24 hours a day, seven days a week whether for a service related query or to pay a bill. We have over the last couple of years developed digital channels which allow our customers to contact us 24/7, including live chat, web self-serve and call back options. We are also tailoring our service offering to customers through intelligent personalisation, ensuring the customer receives a level of service which meets their lifestyle needs.

We work with our customers to understand how they want us to communicate with them. We use all traditional and digital channels to engage with our customers.

Targeted area - 4. CONTINUED

What we said we would do and the assurance that we said we would carry out.

We will continue to explore new ways to promote our publications through social media and our website.

An update on our progress and key assurance findings

Our ongoing customer and stakeholder research programme has informed and developed both our long-term strategy and business plan 2020-25. Based on feedback from over 30,000 customers and stakeholders, 88% of household and 82% of non-household customers supported our plan. 78% of our customers we surveyed also said the plan was affordable. This was achieved through engaging customers via traditional and digital channels. The Yorkshire Forum for Water Customers also recognised that the programme of activity undertaken for PR19 has been much greater in both scope and scale, than previous price reviews.

“The level of innovation and the extent and reach of the customer research programme is commendable and has meant that Yorkshire Water now has an expanded depth and understanding about its customers to shape its services around their preferences.”
Yorkshire Forum for Water Customers, PR19 Assurance Report, September 2018

Our ongoing conversations with customers using both traditional and digital channels have informed the development of our ambitious ‘upper quartile’ customer service targets for the business. Throughout the research programme, our customers told us that when compared to the rest of the industry, they wanted to see improvements in three specific areas of service; leakage, pollution and internal sewer flooding. We have therefore set ambitious targets to achieve this expectation which our customers support. We have committed to reducing leakage by 70%, reducing pollution by 40% and reducing internal sewer flooding incidents by 70% by 2025. Progress against these ambitions will be reported using via the various communications channels our customers use. Our ongoing customer research programme and communications strategy will continue to provide the insight we need to ensure our customers are accessing our publications at a time and in a way that is convenient for them.

What we said we would do and the assurance that we said we would carry out.

An update on our progress and key assurance findings

Information is what customers and stakeholders want and need

We will continue to use our online research community made up from 1,000 Yorkshire Water customers from across our region to ask for feedback on the information we report.

We continue to strengthen our online community which has over 1,000 customers who regularly comment on and take part in research and discussions on a host of different subjects related to topics like customer service, regulatory and company reporting, our plans or even just the way in which we communicate with them. This engagement, alongside our regular interactions with customers and stakeholders has given us much-improved insights into the diverse and changing needs of our customers and stakeholders.

“It’s been an absolute pleasure to be involved in a project that has involved the customer so much and given feedback on all our contributions. How lovely and refreshing. Many organisations could learn from your example.”
Customer (Leeds), Your Water online community, September 2018

In 2018/2019, we have consulted with our online research community on: our Assurance Plan; Annual Performance Report; the structure and presentation of our website; Group structure diagram and description; Long term strategy; Wholesale charges scheme; and the Risks, Strengths and Weaknesses statement.

Our research will include face-to-face consultation with focus groups.

In 2018/2019, we have held face-to-face consultation with focus groups to discuss and review the following publications: our Assurance Plan and Performance Summary Report. We took note of the feedback and amended our publications prior to publishing. Further information on the feedback received from this consultation can be found in each of the reports.

We will make sure our customer engagement process is representative of our overall customer base, particularly with customers in vulnerable circumstances.

We always review our customer engagement process to make sure it is representative of our overall customer base. Our Safeguarding Officer has reviewed some of our publications to make sure they meet the needs of customers in vulnerable circumstances. The Safeguarding Officer provided some principles on our documentation which we continue to work towards.

Next steps and action plan

We complete a review of all our reporting after the publication date to take into account any feedback or queries we receive. We use this to consider how we can continue to improve our reporting and any areas we may want to include as a targeted area throughout the following year. We proactively engage with our customers to identify the areas we will target for additional assurance to improve our reporting. We will publish our findings in our Risks, Strengths and Weaknesses Statement in the autumn.

Targeted area - 5. Effect of our internal SAP programme on our reported information

Why we included this as a targeted area

This is a targeted area of assurance for us in 2018/2019 because we are upgrading our SAP system. Our upgrade project is called our SAP programme, and the accuracy and completeness of the information from our IT systems is central to the overall accuracy of the information we report on.

What we said we would do and the assurance that we said we would carry out.

An update on our progress and key assurance findings

The activities that will deliver assurance on our data are User Acceptance Testing, workshops, training and dual reporting.

Programme progress is reviewed on a weekly basis at the programme steering group. PwC are working with Internal Audit to assure the programme. An action log, based on observations from PwC, is reviewed weekly at the Steering Group. The SAP programme is being delivered in phases. The first phase of SAP implementation went live on 30 June 2019.

Level 1 assurance. Our Level 1 assurance is from the Quality Assurance processes we use for our Data Stream process. They cover the data quality and migration work carried out to review and check the quality of our data. This assurance was completed by the end of December 2018.

Our Level 1 assurance has been completed on 'mock' data we uploaded into our SAP system. Our assurance checked the quality of the migration process and the quality of the data that had been migrated. Our Data Stream programme carried out six separate data loads to check the quality of our data and each one was successful.

Level 2 assurance. Our Level 2 assurance is from the Quality Assurance function in our SAP Programme Management team who complete a continual Quality Review of our strategy and the delivery of our plans. This has and will include stage gates for each phase of our SAP programme to provide assurance on the data stream, our plans, our strategy and the results of data loads and migrations.

The SAP programme has a Quality Assurance function. They ensure that stage gate reviews take place for each phase of the SAP programme. They report their findings to the Steering Group on a regular basis.

Level 3 assurance. Independent assurance will be completed on the SAP programme.

Internal Audit and PwC have jointly conducted assurance on the technology, data, planning, governance, finances, and business readiness of our SAP programme. The actions arising from this assurance have been managed by the Programme Management Office and discussed at the Steering Group. A data audit conducted by Deloitte commenced in July 2019, immediately after go-live, with further assurance activity taking place throughout July and August 2019.

The reports completed by our Level 3 assurers will be reviewed at the Board Audit Committee and Board.

The reports completed by our Level 2 and 3 assurers have and will be reviewed at the Board Audit Committee and Board, where approval will be required before final go live of our new SAP system.

Next steps and action plan

We complete a review of all our reporting after the publication date to take into account any feedback or queries we receive. We use this to consider how we can continue to improve our reporting and any areas we may want to include as a targeted area throughout the following year. We proactively engage with our customers to identify the areas we will target for additional assurance to improve our reporting. We will publish our findings in our Risks, Strengths and Weaknesses Statement in the autumn.

Targeted area - 6. Meeting regulatory guidance

Why we included this as a targeted area

This was a targeted area for us because all the information we publish must meet the requirements set by Ofwat. Our regulator publishes updated requirements and regulatory guidance every year and if we don't understand and meet this, there is a risk information we report that is incorrect. There are two areas where we have chosen to target our assurance this year after feedback from Jacobs our technical auditor, and by Ofwat in our reporting. The specific areas are:

- Application of principal use – our capital spending and associated loss in value of an asset should be directly attributed to one of the four defined price control units. If this is not possible it should be reported in the service where it is used the most with recharges made to the other services to reflect the proportion of the asset used there.
- Calculation of average pumping head – this is the vertical distance that we are able to pump our water when it is stored in boreholes for example.

What we said we would do and the assurance that we said we would carry out.**An update on our progress and key assurance findings**

We will have workshops with the Data Providers and Data Managers involved with principal use and the calculation of average pumping head to discuss the guidance and requirements set by our regulator. This will make sure that our understanding of these requirements are understood internally.

On principle use, we understand the requirements but consider additional clarity and guidance is required from Ofwat to ensure consistency across the industry. We have continued to allocate capital costs using PACE allocation rather than principal use as we still believe that this is the most accurate way to report capital expenditure to meet cost allocation principles. We have made this clear in our reporting and we have discussed it with our independent external auditor Jacobs.

On average pumping head, we have reviewed the guidance and applied additional reviews on the data. We have improved the link with the telemetry team to ensure validation with pump run information and the correct exclusion of those larger pumps not running during the year. The data has been reviewed by Jacobs.

We will update processes and procedures so that they are aligned to the requirements.

All our procedures are reviewed annually in accordance with the latest Regulatory Accounting Guidelines (RAGs). Our procedures are updated to ensure data can be reported against the relevant regulatory requirements. Our procedures are signed off and approved before they are used.

Will make sure our publication managers continue to be trained in the application of our 'three levels of assurance' methodology. Our training will explain how the information providers and content authors who supply information on principal use and pumping head must understand the guidance from Ofwat to improve our reporting in these two areas.

Training has continued through the year. For the APR, we hold a launch event where we provide key messages on our assurance requirements. We followed up this launch event with more detailed smaller briefing sessions. We continue to review the processes we have in place to provide Level 1 and Level 2 assurance. As part of this review, we have strengthened the assurance statement, which is the internal statement our data providers, data managers and senior leaders make to confirm the accuracy of their data and the steps they have taken to confirm this.

Our assurance model is defined in our internal Regulatory Assurance Framework and says that we will use Level 1 and Level 2 approvals to confirm that all our reported information is complete and accurate. These statements will be required for all the publications in this plan.

Level 1 and Level 2 assurance statements have been obtained for all of the data published within the APR.

Next steps and action plan

We review our reporting after publication and consider how we can improve our reporting. We will publish our findings in our Risks, Strengths and Weaknesses Statement in the autumn.

Targeted area - 7. Accuracy of information

Why we included this as a targeted area

The accuracy of our information is included for more assurance based on our own internal assessment and minor errors in our recent reporting. To reduce the risk of errors happening we have applied an increased amount of rigour in our assurance to improve the accuracy of our published information.

What we said we would do and the assurance that we said we would carry out.

An update on our progress and key assurance findings

There are still opportunities for us to prevent the small number of errors in the data we publish. We will share these cases with our reporting and assurance communities to make sure they are aware of the data checks they need to carry out to prevent errors from happening.

Where errors in our data have been identified, we have spoken with the relevant data providers to see what additional checks can be put in place. We spoke about our learnings with our data providers and data managers as part of our APR launch event. We have also put in place additional quality assurance checks on the tables in this year's APR.

On occasions our reported data can be out of line with the historical trend. Where data is materially different from previous years we will improve our explanation of the trend it is showing.

We spoke about our learnings with our data providers and data managers as part of our APR launch event. We have also put in place additional quality assurance checks on the tables in this year's APR.

Each year we seek to improve our reporting, which can lead to a change from previous years. We will explain clearly where we have made improvements to reporting and any material impacts this has on the data.

A review of our Level 1 and Level 2 assurance processes has taken place throughout the year. We have strengthened the assurance statement, which is the internal statement our data providers, data managers and senior leaders make to confirm the accuracy of their data and the steps they have taken to confirm this.

We need to be confident that every piece of information is in the correct format. We will strengthen our internal processes to ensure that the data is reported in the correct format and is in line with the guidance.

We spoke about our learnings with our data providers and data managers as part of our APR launch event. We have also put in place additional quality assurance checks on the tables in this year's APR.

We are also using new technologies to control and protect our data sources with suitably documented quality checks and change controls to prevent accidental corruption.

To make sure we deliver assurance to a consistent quality, our data providers and data managers are required to document how they produce and check their data. Our data providers and data managers regularly review their reporting procedures to see how data can be further improved or automated. Our SAP improvement programme should allow our data providers and data managers to take advantage of new technologies to control and check the quality of our data in the future.

What we said we would do and the assurance that we said we would carry out.	An update on our progress and key assurance findings
<p>Our assurance will make sure our publication managers and all those who contribute information to our reporting process and publications are aware of and can carry out assurance based on our 'three levels of assurance' methodology.</p>	<p>Training has continued throughout the year. For the APR, we hold a launch event where we provide key messages on our assurance requirements. We followed up this launch event with more detailed smaller assurance briefing sessions. A review of our Level 1 and Level 2 assurance processes has taken place throughout the year. A strengthened assurance statement has been implemented to support Level 1 and Level 2 assurance review checks.</p>
<p>Our assurance model has been defined internally in our Regulatory Assurance Framework which specifies that we will use Level 1 and Level 2 approvals to confirm that all our reported information is complete and accurate.</p>	<p>Level 1 and Level 2 approvals have been obtained for all the information reported within the APR.</p>
<p>We will continue use our technical auditors Jacobs, to assure information in our APR, and engage with them on other areas of reporting that have a greater risk around accuracy.</p>	<p>The assurance findings from Jacobs are summarised later within this report and their assurance statement is included in Appendix 2.</p>
<p>We are also researching data analytic solutions to apply intelligence to our reporting that will allow us to identify and correct errors. This will include checks across our reports to check for data inconsistencies.</p>	<p>We continue to look at the best solutions available to assist in our quality assurance checks. In the meantime, we have implemented additional manual quality assurance checks of tables to check for data inconsistencies.</p>

Next steps and action plan

We complete a review of all our reporting after the publication date to take into account any feedback or queries we receive. We use this to consider how we can continue to improve our reporting and any areas we may want to include as a targeted area throughout the following year. We proactively engage with our customers to identify the areas we will target for additional assurance to improve our reporting. We will publish our findings in our risks, strengths and weaknesses statement in the autumn.

APR Assurance Findings

Summary of the financial audit findings

We prepare our regulatory accounts in accordance with the Regulatory Accounting Guidelines issued by Ofwat. We have instructed Deloitte to carry out the audit of our regulatory accounts and the financial information in the APR. Appendix 1 contains the audit opinion from Deloitte, which covers:

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) and
- 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 water and wastewater (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 water 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),
- the revenue analysis & wholesale control reconciliation (table 2I),
- the infrastructure network reinforcement costs (table 2J)
- the infrastructure charges reconciliation (table 2K) and
- the related notes.

The findings from the financial auditor's review were presented to the Board Audit Committee on 9 July 2019. Findings from their review and their audit opinion is included in Appendix 1 of this APR. Deloitte also provide assurance over Table 1F and some of the tables in Section 4. This is completed by agreed upon procedures.

Summary of the technical audit findings

We prepared all other data within the APR in line with the definitions of our performance commitments and in accordance with any relevant guidance from Ofwat. We instructed Jacobs to carry out the audits of our performance commitments and supporting information as well as other non-financial information contained within the APR.

Overall, Jacobs have confirmed that the information provided in the Annual Performance Report 2019 provides a fair, balanced and understandable summary of the Company's 2018/19 circumstances and performance.

Jacobs raised 139 comments as a result of their assurance reviews. Of these:

- 72 were raised as being without concern
- 67 are observations where there were opportunities to make improvements in the future but Jacobs were content with the reported information
- 0 observations where there was concern over the potential for material error
- 0 observations where there was evidence of material error or mis-statement.

The areas for improvement have been put into an action plan with identified action owners. Progress against the completion of these actions will be reviewed by senior management and reviewed by Jacobs at future audits.

The findings from the technical auditor's review were presented to the Board Audit Committee on 9 July 2019. Findings from their review and their assurance statement is included in Appendix 2 of this APR.

6.

Our engagement with our customers and stakeholders



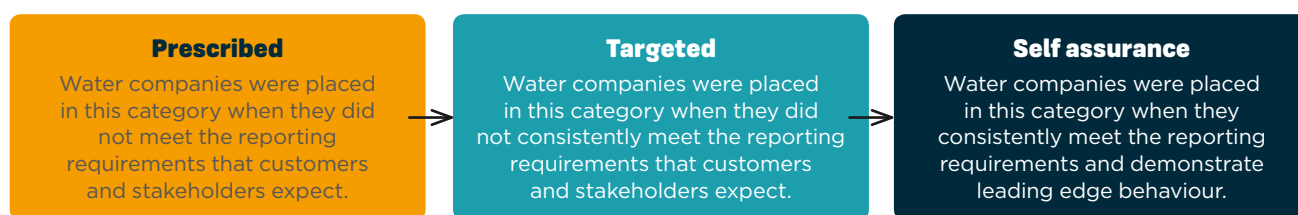
Securing stakeholder trust

We always want to provide customers with information that they are able to trust.

It is important to us that we provide performance information that our customers and stakeholders want and, in a format, which suits them. When we don't get this right, we risk losing trust and confidence. We have assurance processes in place to make sure that the information we publish is accurate and can be trusted.

Ofwat, our economic regulator, introduced a process for assessing the quality of the information we provide for our customers and stakeholders. It assesses whether the information provided is accurate, reliable, transparent, timely and tailored to its audience. It is a tool to challenge all companies to be transparent with customers and stakeholders about the data they publish. This is called the Company Monitoring Framework (CMF).

Ofwat completes a CMF assessment annually and places companies into one of three assurance categories: self-assurance; targeted; or prescribed. Each year, water companies can move up or down one category. For example, companies can move up from targeted to self-assurance, or up from prescribed to targeted assurance. Companies cannot move up two categories in one year, for example, from prescribed to self-assurance.



The most recent CMF assessment was in January 2019. We were placed in the targeted category along with most other water companies, which is the same category we were placed in as part of the previous November 2017 assessment. We exceeded Ofwat's expectations in three areas but Ofwat had minor concerns in one assessment area and serious concerns in another area. The table below shows our result against the 11 CMF assessment categories.

CMF assessment category	2019 result	What we have done to address any concerns
Financial Monitoring Framework	Minor concerns	In our 2017/2018 Annual Performance Report (APR), we incorrectly calculated the dividend yield and dividend cover figures. We republished our APR that same year with the correct figures for dividend yield and dividend cover along with additional narrative to explain the figures. We have carried out additional assurance this year to make sure these figures are correct.
Charges Engagement	Serious concerns	We made some improvements to our 2018/2019 new connection charging arrangements for developers, self-lay providers and new appointments and variations and republished the document in April 2018 following its initial publication in February 2018. However, we didn't make it very clear what had changed in the charges document, and we didn't communicate these changes effectively with the customers listed above, our regulators and affected trade organisations. For our 2019/2020 new connection charging arrangements, we included a change log in the front of the document to make our stakeholders aware of any changes we have made. We have also made it clear on our developer services charges webpage when the new connection charging arrangements had been republished.
Outcomes	Exceeds expectations	We had no concerns in these areas of the CMF. We will continue to make improvements to these areas so that we meet and exceed expectations.
Water Resources Management Plan and Market Information	Meets expectations	
Long-term Viability Statement	Meets expectations	
Financial Flows	Meets expectations	
Risk & Compliance Statement	Exceeds expectations	
Assurance Plan	Exceeds expectations	
Cost Assessment	Meets expectations	
Data Consistency	Meets expectations	
Data Quality	Meets expectations	

Whilst we have remained in the targeted category, we recognise that there is more for us to do to reduce errors in our reporting and to continue to drive transparency of our reporting.

We will continue to challenge ourselves to make sure that information we publish can be trusted by customers.

To meet our aspiration to achieve 'self-assurance' in the next Ofwat assessment we have identified opportunities for improvement

Improvements we have been working on

We sought feedback from our customers and the Yorkshire Forum for Water Customers on the presentation and coverage of our performance reporting. On this page we go through a few of the things we have done this year to improve how we present information on our performance.

Website redesign

We have completely redesigned the 'Our Performance – How we're doing' webpage by understanding the journey our customers take when viewing our performance information.

We have brought together all the information related to our performance on this single webpage. We have included links to helpful websites such as Discover Water and our reports webpage. We have also included information on our performance directly on the webpage, this means you no longer have to download PDF reports to see how we are performing. We had 1,548 visitors on our performance webpage between 1st April 2018 and 31st March 2019. By making improvements to our performance webpage, we hope to increase the number of visitors.

Animations

We recognise that our reports are quite long, and our customers have told us that videos can be a good way for us to present information. This year, we have created two animations.

- Board leadership and governance – this provides a summary of the information in Section 6 of our APR
- Progress on delivering our performance commitments – this provides a summary of the information in Section 4 of our APR

Both videos can be viewed on our reports webpage: www.yorkshirewater.com/reports

Crystal Mark

We have continued to work with Plain English Campaign to make sure our publications are easy to read. We have received a Crystal Mark for four of our publications:

- Summary of our Risks, Strengths and Weaknesses Statement.
- Board statement on company direction and performance.
- Performance summary.
- Performance at a glance.

Global Reporting Initiative

To enable our drive towards greater transparency, this year we have continued to report in accordance with the Global Reporting Initiative (GRI) Standards: Core Option. In keeping with our commitment to be open by default, we have taken action to further expand our disclosures under this framework, adding priority areas including water and supply chains. In addition, we have embedded the Sustainable Development Goals (SDGs) throughout our Annual Report and Financial Statements for the first time to show how our actions are supporting the SDGs.

You can find our GRI report and contents index, which accompanies our integrated annual report and financial statements, here: www.yorkshirewater.co.uk/reports

You can find out more about the GRI Standards here: www.globalreporting.org/standards/

You can find out more about the SDGs here: www.sustainabledevelopment.un.org/sdgs

Engaging with our customers

We want to make sure that information on our performance is appropriate for our customers and stakeholders. We want to continually improve how we publish this information.

As part of our ongoing customer engagement and participation activity, we regularly consult with our customers on our performance reporting. This insight highlights what is important to our customers and whether the information published in the reports is clear, understandable and relevant.

Over the past three years we have created an online research community consisting of a representative sample of more than 1,000 Yorkshire Water customers from across the region. The online community allows us to continuously test and tailor our service aspirations and communications with our customers. The community is part of a wider research programme to make sure that customers are at the heart of what we do.

Feedback on our Annual Performance Report

This Annual Performance Report (APR) has been developed to reflect customer feedback. To test this year's report, we presented a draft version to our online community, and asked for feedback on the content of the report. We asked the online community:

- To highlight areas of the APR they most understood and least understood
- To highlight the areas they found relevant
- To comment on the flow, language and the presentation
- Whether they trusted the information presented in the APR
- Whether the Board statement on company performance and direction clearly communicates the fact that Yorkshire Water has a fair and reasoned approach to delivering services
- Whether there is a balance of text and infographics

We received over 400 responses from members of the online community on the different sections of our APR.

Feedback from the online community is summarised as follows:

- 82% of the participants agreed that they liked the way section 3 is presented
- 78% of the participants agreed that they liked the way section 1 is presented
- 80% of the participants agreed that they trust the information in sections 1 and 3
- 82% of the participants agreed that the balance between the graphics and text is right
- 88% of the participants agreed that the language in Section 3 is easy to understand and digest
- 87% of the participants agreed that the structure of Section 3 flows in a way that makes sense to me
- 79% (19% neither agreed or disagreed) of the participants agreed that the Board statement on company performance and direction clearly communicates the fact that Yorkshire Water has a fair and reasoned approach to delivering services

Feedback on our performance summary

In 2018, our customers also told us they would like to see a summary of our Annual Performance Report. We listened to our customers and produced a Performance Summary report. In 2019, we continued to work with our customers to improve the performance summary report to make sure it meets their needs and expectations. Some of our customers told us they wanted to see a shorter version of our performance summary. So, this year we have also produced a document showing our performance at a glance. This document shows how we are performing against our 26 performance commitments on a single page. Here is a link to our performance summary and our performance at a glance: www.yorkshirewater.com/reports

Continuous and ongoing feedback

We welcome this feedback and have amended our reports to reflect the feedback we received. We will continue to engage with our customers on the format and content of our reports to make improvements for future years.

We know there is more to do and so will continue to listen to you and act upon your feedback. We will publish a Risks, Strengths and Weaknesses Statement in Autumn 2019. This will provide information on the risks, strengths and weaknesses with our reporting and will provide information on the areas that we will target for additional assurance over the coming year.

Here are some verbatim comments from our customers

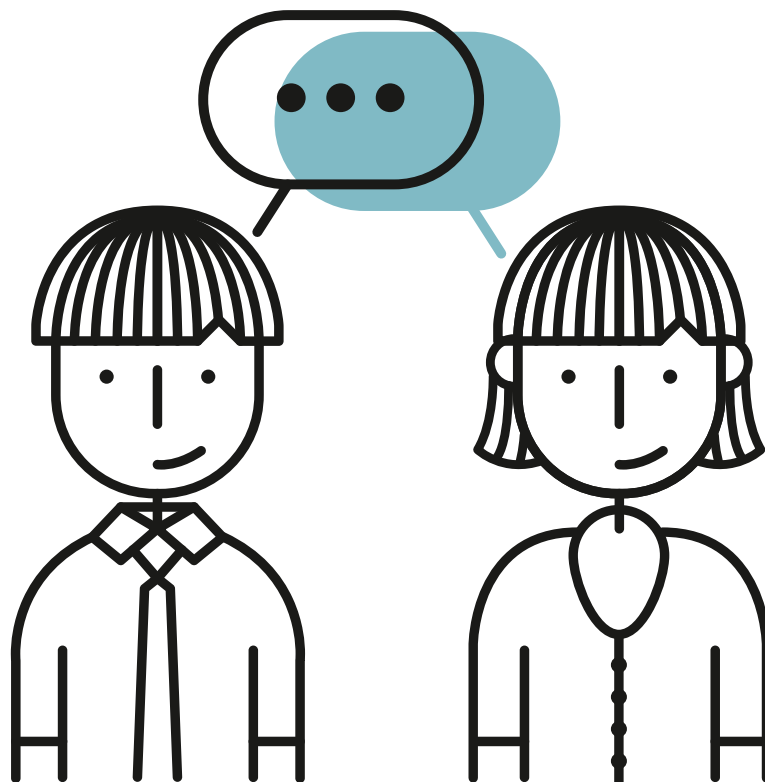
The way this page is set out is very easy to understand, especially as Yorkshire Water is quite happy to show where they have failed in their expected outcome. That is they have left red crosses where Yorkshire Water failed to achieve their hoped for outcome.

Page 17 could possibly have slightly larger print, or turn it round to landscape to enable larger font sizes, as I found it difficult to read even with my glasses on.

The information was presented in a clear way using plain language. The chart provided good detail of how the company are doing and what it aims to do next year.

I love all the pictorial graphs/diagrams and the detailed content. The level of detail is great and very informative.

Beautifully set out with lots of graphics and images. Also like that there are links to other documents if required. It actually does make it much easier to read and digest.



Yorkshire Forum for Water Customers

What is the Yorkshire Forum for Water Customers?

The Yorkshire Forum for Water Customers (the Forum) is an independent customer-challenge group. The Forum was established in 2012 and is made up of key groups in Yorkshire who collectively represent Yorkshire Water's customers. The panel's members include Consumer Council for Water, Natural England, Citizens Advice, National Farmers Union, The Rivers Trust and The Environment Agency.

You can find more information about the forum and its members here: www.yorkshirewater.com/customerforum

If you would like to contact the Forum about Yorkshire Water's performance or about the Forum, please email: theforum@yorkshirewater.co.uk

The Forum provides constructive challenge to the objectives and proposed delivery of Yorkshire Water's business plans. The Forum also monitor, challenge and comment on the progress we make on our performance commitments. They make sure that we present information on our performance commitments in a way which suits our customers' needs.



Reporting our performance to the Forum

We reported progress against the performance commitments to the Forum throughout 2018/2019. Our technical auditor, Jacobs, also attended a Forum meeting in June 2019 to provide their report on Yorkshire Water's performance and reporting. This allows the Forum to challenge and evaluate the level of performance achieved to make sure we are delivering for our customers and to understand the delivery plans for the coming year.

Feedback on our publications

The draft Annual Performance Report, Performance Summary report and Data Assurance Summary were all shared with the Forum, allowing them an opportunity to review and provide feedback on the information being published.

We sought advice and direction from the Forum throughout 2018/2019 on how we report and present information on our performance commitments. We discussed the following with the Forum:

- The design of 'Our Performance – How we're doing' webpage.
- Producing animations on our performance, Board leadership, transparency and governance.
- Creating a one-page summary of our performance.
- How we assure our performance commitment information.

The Forum has challenged us over the past year regarding our use of plain English. We have been working with the Plain English Campaign to make sure our publications are easy to read. We have received a Crystal Mark for four of our publications:

- Summary of our Risks, Strengths and Weaknesses Statement.
- Board statement on Company direction and performance.
- Performance summary.
- Performance at a glance.

They are available on our website here: www.yorkshirewater.com/reports

The Forum has published a statement reflecting on our performance for the year 2018/2019. The report is available here: www.yorkshirewater.com/customerforum

Engaging our stakeholders

As well as regularly meeting with our regulators, every year we also aim to meet with each of our local members of Parliament, local authority leaders and Chief Executives, and a range of non-governmental organisations who have an interest in our work.

These meetings give us the opportunity to update stakeholders on what we're doing, and they also provide a forum for stakeholders to raise any concerns or questions they may have. As our work has such a significant impact on the region, we regularly share information on our performance both face to face during our regular meetings and by email through our stakeholder newsletter.

We aim to be open and transparent with stakeholders around our performance and we regularly ask them how we can improve the information we share with them. More information on our stakeholder engagement, including some case studies, can be found online at:

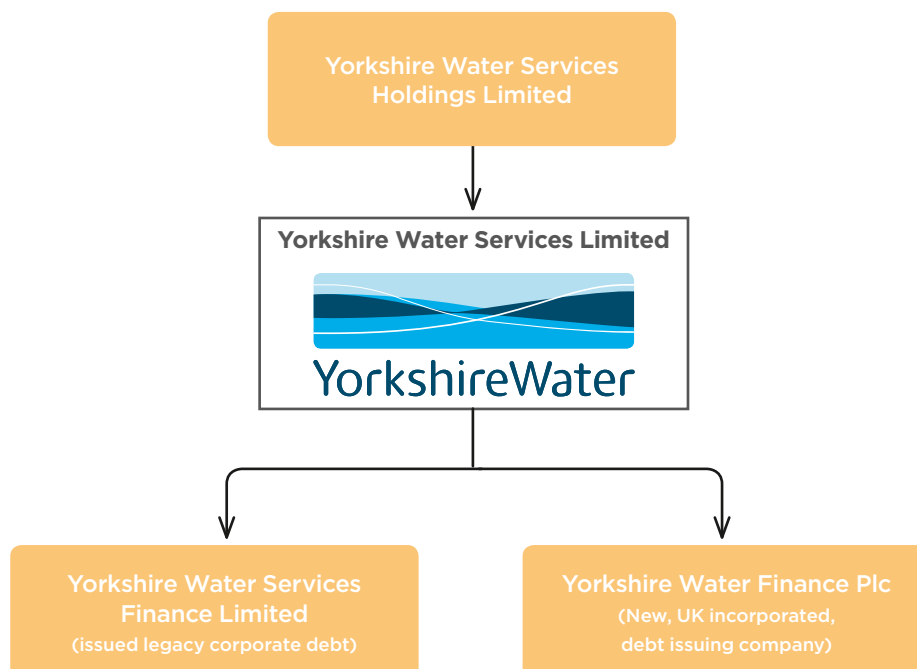
www.yorkshirewater.com/about-us/newsroom-media/public-affairs

We recognise the role of the media in contributing to stakeholder understanding of, and trust in, our business and services. We work with all strands of the media to raise awareness of our activities and respond to media interest. We track media coverage of our business activities and met our 2018/2019 target for at least 65% of coverage to be positive in nature.

Simplifying our financing structure

We recognised that unnecessarily complex financial structures only add to public concern as to the way in which companies are financed. In 2018, Yorkshire Water took steps to remove its Cayman Island incorporated, and wholly and exclusively UK tax resident, financing subsidiaries.

Following Ofwat consent, HM Revenue & Customs (HMRC) clearance, rating confirmations and secured creditor consent, on 16 August 2018 a new UK incorporated financing subsidiary, Yorkshire Water Finance Plc, replaced the Cayman Island subsidiaries by being substituted as the issuer of approximately £3 billion of listed bonds and private notes. On 17 August 2018 the Cayman Island companies, now dormant companies, were transferred from Yorkshire Water ownership to our parent company, Kelda Group Limited and have been dissolved. The following diagram shows our simplified company structure.

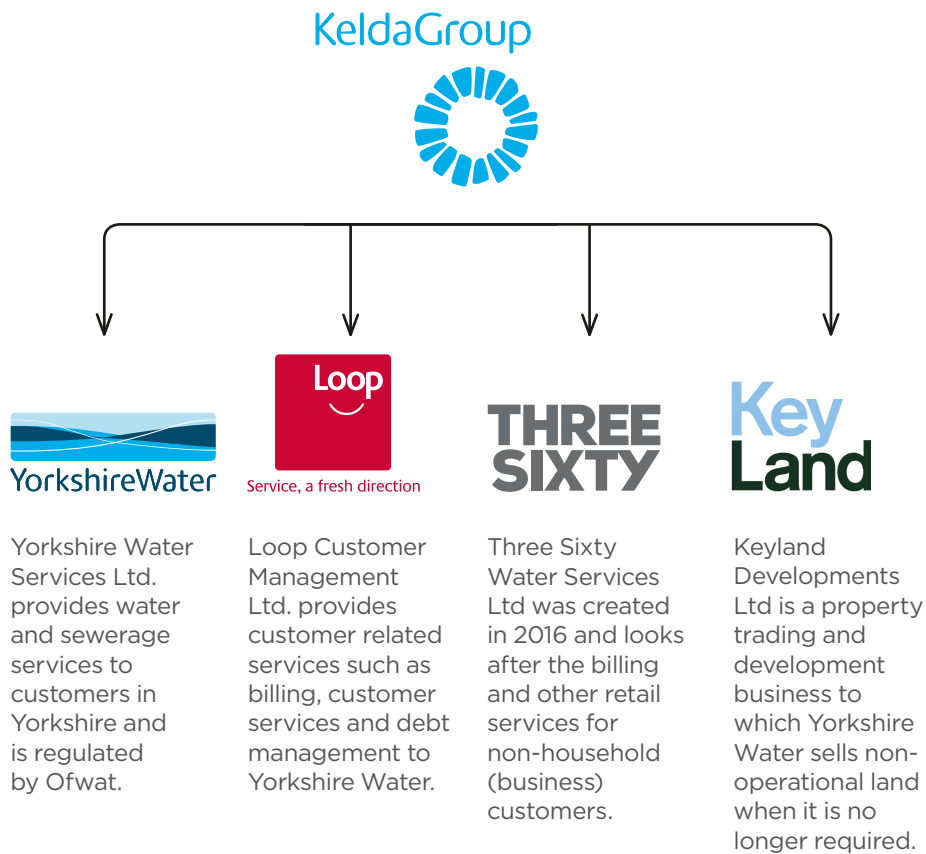


7. **Our governance**

Our company structure

Yorkshire Water sits within the Kelda Group, which is privately owned. The Kelda Group is made up of several businesses and Kelda Holdings Ltd (the top holding company) is owned by a group of investment companies. The diagram below shows a high-level structure of the group and the companies.

A more detailed diagram of the Kelda Group structure is available in our Annual Report and Financial Statements, on Kelda Group's website and be found in Appendix 4: Disclosures of this report.



Yorkshire Water is the only company in this group that is regulated by Ofwat. It holds the licence to provide water and sewerage services to our customers and the governance for Yorkshire Water is described within this report.

However, all the companies within the group share common values in relation to governance and directors may be on the board of more than one company in the group.

More information

We have provided more information about our corporate structure and provided a summary of the Group company activities within Appendix 4 of this Annual Performance Report.

We recognise that there is a lot of information on our governance and that some of our customers don't have time to read it all. So, we have created a short video talking about our governance and board leadership.

[Click here for the video www.yorkshirewater.com/reports](http://www.yorkshirewater.com/reports)

Biographies of all our board members, further information on the composition of the board and its committees, and information on the recruitment of non-executive directors is available in our Annual Report and Financial Statements 2019.

[Click here for more information www.yorkshirewater.com/reports](http://www.yorkshirewater.com/reports)

Our Board of Directors

The primary focus for the board is to lead the development and delivery of the company's purpose, strategy and values needed to meet the service and performance expectations of our customers and stakeholders.

Our board consists of an independent Chairman, three executive directors, four independent non-executive directors and three investor non-executive directors.

An executive director is a member of the board who also has management responsibilities within the company. A non-executive director is a board member who contributes their wider skills and experience to board decision-making. They do not typically engage in the day-to-day management of the organisation, but are involved in policy making, setting the company's strategy, values and standards, making sure that the necessary financial and people resources are in place, and reviewing management performance. We are required to have a number of independent non-executive directors on our board, which means that they are free of any links with us or our shareholders and are therefore unbiased when making decisions.

Our investor non-executive directors represent our larger shareholders.

The composition of the Board at 31 March 2019 was as follows:

Independent Non-Executive Chairman
Anthony Rabin



Independent Non-Executive Directors

Ray O'Toole



Julia Unwin



Andrew Wyllie



Andrew Merrick
(appointed 01/06/2019)



Executive Directors

Richard Flint,
Chief Executive



Liz Barber,
Director of Finance,
Regulation and Markets



Nevil Muncaster,
Director of Asset
Management



Investor Non-Executive Directors

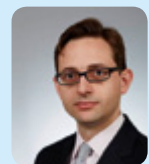
Scott Auty



Andrew Dench



Michael Osborne



Since the year-end, Andrew Merrick joined our board as an independent non-executive director on 1 June 2019.

Good corporate governance

Our Board of Directors is committed to achieving the highest standards of corporate governance. This reflects the special responsibilities we have to be open and accountable and strengthen the trust in all our stakeholders, including our customers. To do this we comply with company law, best practice and the following requirements:

The UK Corporate Governance Code (the Code).

This is published by the Financial Reporting Council and sets out standards of good practice for companies listed on the stock exchange.

Yorkshire Water is a private limited company and does not have listed shares. However, the terms of our Instrument of Appointment require us to conduct our business as if we were a separate listed public company. We have therefore reported our compliance with the Code in our Annual Report and Financial Statements.

The UK Corporate Governance Code is available on the website of the Financial Reporting Council at www.frc.org.uk.

In July 2018 a new UK Corporate Governance Code was published which came into effect from 1 April 2019 for Yorkshire Water. This has been reviewed in detail by our board and any areas of potential non-compliance highlighted with a plan put in place to achieve compliance where appropriate. We will report against our compliance with the new code in the Annual Report and Financial Statements for the year ended 31 March 2020.

The Ofwat 'Board Leadership, Transparency and Governance Principles' (the Ofwat Principles).

These were first published in 2014 by Ofwat and set out the principles it expects regulated water companies to follow.

In January 2019 Ofwat published a revised set of principles. They contain four key objectives which are set out below, along with an explanation of how we comply with these:

Ofwat principle

The regulated company board establishes the company's purpose, strategy and values, and is satisfied that these and its culture reflect the needs of all those it serves.

There has been much work undertaken in the year in relation to the purpose and strategy of the company. This has included publishing the long-term strategy of the company in August 2018 and the submission of our next Price Review plan to Ofwat, also in August 2018. The board has held multiple workshops throughout the year to review and discuss these strategies and to take the key decisions in relation to these.

The board also sets the values for the company and monitors how these are reflected in the culture through a variety of means, including reviewing feedback from the bi-annual Kelda Voice employee survey, reviewing reports from internal audit at the audit committee and through the regular interactions of the board with the senior management team across the business.

To determine whether the purpose, strategy and values reflect the needs of those it serves, there was significant customer engagement undertaken as part of the work in relation to the five-yearly Price Review plan. This feedback was reviewed by the board in detail and used to shape much of our submission to Ofwat.

In addition, the board is in the process of setting-up an employee engagement forum to hear directly from our employees on a range of matters being considered by the board. We also have three investor directors sitting on our board to ensure that we are able to consider the needs of our shareholders in the decisions that the board makes, in compliance with section 172 of the Companies Act 2006.

Ofwat principle

The regulated company has an effective board with full responsibility for all aspects of the regulated company's business for the long-term.

We undertake an annual board evaluation to ensure that our board continues to operate effectively.

The appointment of shareholder representatives to our board in September 2017 means that our board is able to operate effectively with full responsibility for all aspects of the regulated company's business, to the extent permitted under company law.

The board also gives much consideration to the longer-term success of the business.

Ofwat principle

The board's leadership and approach to transparency and governance engenders trust in the regulated company and ensures accountability for their actions.

One of our five Big Goals is transparency and we are committed to becoming an Open Data company by 2020. In May 2018 we published a report on our consultation with our customers around our openness charter and published an openness roadmap to indicate the order in which we would be releasing the data that customers want to see and what each release would include. This includes information on water quality, pollution, micro plastics, street works, pay and dividends, gender pay gap, asset information and corporate policies.

Customer experience and stakeholder trust has been identified by the board as one of our principal risks and we have provided information on how this has been mitigated in our Annual Report and Financial Statements.

We also seek to assure information through independent means wherever we can, and we detail in this report where information has been independently verified and the three-line assurance process that we have in place to assure the information that we provide to make it as trustworthy as possible.

Ofwat principle

Boards and their committees are competent, well run, and have sufficient independent membership, ensuring they can make high quality decisions that address diverse customer and stakeholder needs.

As described above, we undertake a board evaluation process each year to assess the competency of our board. Further information on the process conducted in the year under review is on page 157.

We have also provided a report from each of our committees in our Annual Report and Financial Statements. This sets out the work that each committee has done during the year, the purpose of the committee and the areas for which each committee can be held accountable.

We have gone beyond the governance requirements of having an audit, remuneration and nomination committee to also have social value and safety, health and environment committees because we recognise the importance of these two areas of focus and the need for the board to spend more time on these areas to enable high-quality decisions to be made, with detailed information available to the board that takes into account the needs of our customers and other stakeholders.

The Wates Corporate Governance Principles for Large Private Companies

The above principles were published in December 2018 and are a voluntary code for private companies.

These contain six principles relating to purpose and leadership, board composition, director responsibilities, opportunity and risk, remuneration and stakeholder relationships and engagement.

The board has reviewed these principles and considers that it complies with all six. Further information on the way the board operates in each of the six areas identified is contained in our Annual Report and Financial Statements.

Our full governance report is available in our Annual Report and Financial Statements 2019, setting out how we comply with the Code or explaining where we do not comply. The corporate governance statement in Appendix 4: Disclosures, explains where we have not complied at any point in the year. The following paragraphs provide an overall view of our compliance with the main principles of both the Code and the Ofwat Principles.

This report also meets the requirements of the Disclosure and Transparency Rules of the UK Listing Authority and provides more information on the group structure, company performance, key risks to the business and the work of our Board's committees, including the Nomination Committee's role in the recruitment of our new independent non-executive director, Andrew Merrick and a Remuneration Committee report (describing the remuneration of directors in the same way as a listed company).

Board leadership

The board is accountable to Yorkshire Water's customers and other stakeholders for its activities. It is responsible for the control of Yorkshire Water's business, its strategy, its values and its decisions. It is focused on the development and delivery of the strategy needed to meet the service and performance expectations of Yorkshire Water's customers and all its various stakeholders.

The composition of our board and our decision-making framework allows for well-informed and high-quality decisions in the best interests of Yorkshire Water. The composition of the board is subject to the requirements of the Code and appointments are made following a rigorous process to make sure that it is well equipped to carry out long-term strategic and sustainable decision-making in the interests of customers and other stakeholders

For most of the year under review there were just three independent non-executive directors alongside the chair, following the departure of Teresa Robson-Capps from the board on 31 August 2018. However, after the year-end, Andrew Merrick was appointed to our board with effect from 1 June 2019 and therefore the number of independent

non-executive directors, in addition to the chair, has returned to four.

The Yorkshire Water board has a schedule of matters reserved for its decision and approval, which is reviewed on a regular basis having regard to the overall group strategic plans.

This makes clear the board's responsibility to set the company's business strategy and strategic plans. It includes matters relating to company structure, dividend policy, material regulatory submissions and external press releases, along with significant operational and strategic matters. The schedule is published on our website at www.yorkshirewater.com.

The schedule of matters reserved to Yorkshire Water's parent company, Kelda Holdings Ltd, is focused on group level strategic plans and key policies, and other issues that a shareholder of a limited company would be expected to approve.

These include:

- Approval of the business plans for the group
- Approval of interim and financial statements
- Recommendations of dividends
- Significant investment and major new business proposals
- The group's system of internal control and risk management
- Any significant organisational and corporate governance arrangements

The board is content that it has always been able to focus on making well-informed and high quality strategic and sustainable decisions in the best interests of the company for the long-term.

The boards of Kelda Holdings and Yorkshire Water work independently of each other, although there is good collaboration between them. Whilst investor non-executive directors have been present on our board since 2017, the independent non-executive directors remain the largest single group on the board.

There are clear levels of authority delegated by the board to management, to allow management to take decisions in the normal course of business. The board, in turn, holds the management team to account for its day-to-day operations and the performance of the company.

At each meeting the board considers health and safety, financial and non-financial business performance,

including both past performance and anticipated future performance, the strategy of the business and updates on the progress in each of the key strategic areas, which form the basis for discussion and debate around all aspects of strategy.

There are also regular detailed updates on customer experience, people-related matters and from other specific areas of the business. The board also reviews capital expenditure and procurement approvals in line with our internal escalation policies.

Monthly reports on financial performance, people matters, governance, compliance and health and safety are circulated to the board members regardless of whether or not a board meeting is scheduled.

Board committees

The board has established and delegated specific responsibilities to audit, nomination, remuneration, safety, health and environment and social value committees, all of which operate within Yorkshire Water. Each of these committees has written terms of reference which can be viewed on the corporate governance section of our website at: www.yorkshirewater.com.

The terms of reference set out the purpose of the committee, what decisions they can take and which matters must be referred to the Yorkshire Water board for a decision.

Each committee reports back to the board after each meeting to ensure that the whole board is aware of the matters considered by the committees.

Membership of the Audit, and Remuneration Committees includes a majority of independent non-executive directors as required by the Code and by Ofwat.

There are three investor directors on the Nomination Committee which means that we do not comply with the Code in having a majority of non-executive directors. However the board believes that the investor directors bring valuable insight from our shareholders to the committee.

The Social Value Committee was established by the board in January 2018. Its overarching intention is to help the company think differently about Yorkshire Water's position in society and to protect and enhance its integrity and social value.

The Yorkshire Water Leadership Team is charged with overseeing the day-to-day operations of the company and meets on a weekly basis.

Further information on the board's committees, their structure, duties, purpose and attendance are contained in our Annual Report and Financial Statements 2019.

Chairman of the Board

Anthony Rabin was appointed as our independent non-executive chairman on 9 September 2016. Anthony is also the independent chairman of Kelda Holdings Limited and Kelda Eurobond Co Limited.

In accordance with the Code, the board considered Anthony Rabin to be independent on his appointment and he continues to be independent.

This is because Anthony has no relationship, nor has he ever had any relationship with any of the investment companies owning Kelda Holdings except for his Chairmanship of Kelda Holdings Limited and Kelda Eurobond Co Limited.

The Code does not prohibit chairmanship of other companies in the group.

The Board considers his position as independent chairman of the other group companies to be an important link in ensuring visibility and accountability between the boards and maintaining good governance.

Separate statements on the roles of the chairman and chief executive of Yorkshire Water are available on our website at www.yorkshirewater.com

Meetings of the various boards are separate, and as with all the directors, Anthony is required to disclose any conflict of interests arising at each meeting.

The chairman's performance was appraised as part of an externally facilitated board effectiveness review in 2018/2019 and both he and the board were found to be operating effectively.

Appointments to the Board

The composition, skills and diversity of the board is reviewed periodically, alongside an annual evaluation of the board's performance, to ensure that it remains effective.

The size and structure of the board is continually reviewed by the Nomination Committee.

Board appointments are conducted under a process led by the Nomination Committee, and a Board Appointments policy was approved in November 2018 to ensure a consistent procedure. Decisions are based on merit and objective criteria, promoting diversity.

During the year, the board, led by its Nomination Committee as required by the Code, undertook an extensive and rigorous recruitment process, in line with the Board Appointments policy, for a new Independent Non-Executive Director to replace Teresa Robson-Capps, who resigned in August 2018. This process was supported by Russell Reynolds, an independent external search consultancy and led to the successful appointment Andrew Merrick who joined Yorkshire Water as an independent

non-executive director on 1 June 2019. Further details of the appointment process are described in the Nomination Committee report contained in our Annual Report and Financial Statements 2019.

Director independence

The board is satisfied that it has sufficient independent membership and that both the board and its committees have the appropriate balance of skills, experience, independence and knowledge of Yorkshire Water to enable them to effectively carry out their duties and responsibilities. At the end of March 2019, the board structure complied with the Ofwat's requirement that the number of independent Non-Executive Directors (including the independent chairman) be greater than the number of executive directors.

The appointment of non-executive directors representing investors to our board means that it no longer complies with the Code's requirement that at least half of the board, excluding the chairman, comprise independent non-executive directors.

We have found having investor directors on our board extremely beneficial so that we can hear shareholder views first-hand and ensure that our shareholders have a full understanding of the opportunities and challenges facing the business. It also enables the business to operate as if it is a separate entity as required by the Ofwat Board Leadership, Governance and Transparency Principles.

We explain the balance of the board further in our Annual Report and Financial Statements 2019 and in our Corporate Governance Statement contained in Appendix 4: Disclosures.

The board reviews the independence of the independent non-executive directors each year, considering their tenure, relationships and circumstances as well as considering the behaviour of each director at board meetings and whether or not they contribute to unbiased and independent debate. All of the independent non-executive directors were independent upon appointment and the board believes that all four remain wholly independent in relation to the criteria set out in Provision B.1.1 of the UK Corporate Governance Code.

In accordance with our licence to operate clean and waste water services, our board also contains at least three independent non-executive directors who in accordance with the wording in our licence are 'persons of standing with relevant experience' and who 'collectively have connections with and knowledge' of the area within which the company operates its licensed activities, and 'an understanding of the interests of the customers of the company and how these can be respected and protected'.

Senior Independent Director

The Code requires the appointment of a 'Senior Independent Director' who acts as an intermediary for the other directors, acts as a sounding board for the chairman and leads the appraisal of the chairman's performance each year.

Ray O'Toole is appointed by our board as senior independent director and has held the role since 12 July 2017.

Directors' training and development

The board receives regular updates on governance-related matters and more formal training where appropriate. Potential training needs are discussed as part of individual performance evaluations, plus each director is given the opportunity to flag any additional training requirements as part of the annual board evaluation process.

New directors joining the company are given a broad and comprehensive induction to the business, consisting of site visits, meetings with key personnel and detailed information relating to the business, as well as any training specifically required in relation to the duties of directors and their role on the board.

The board considers the role of the company secretary to be key in ensuring that the board has the right governance in place and that board processes follow best practice. The company secretary meets with each of the directors individually as necessary to discuss governance-related matters and provides a governance report to the board on a monthly basis. The directors are also able to obtain independent professional advice at the expense of the company whenever necessary.

Board evaluation

The Code requires that the board carries out an annual evaluation of the performance of the board, its committees and directors. Every three years this is carried out with the help of a specialist external company.

In November 2018 our annual board evaluation was externally facilitated by Independent Audit Limited. Independent Audit Limited are entirely independent from Yorkshire Water and provide no other services to the business.

The evaluation consisted of one-to-one interviews with each of the board members and the observation of a board meeting.

The review concluded that the board was operating effectively and had a number of key strengths, including a strong culture of openness and public service amongst all of the board members. In addition, the review noted that there was a high level of integrity common to all members of the board, together with a strong commitment to Yorkshire Water and a desire to do the right thing.

The review also highlighted a number of areas where additional focus may be beneficial.

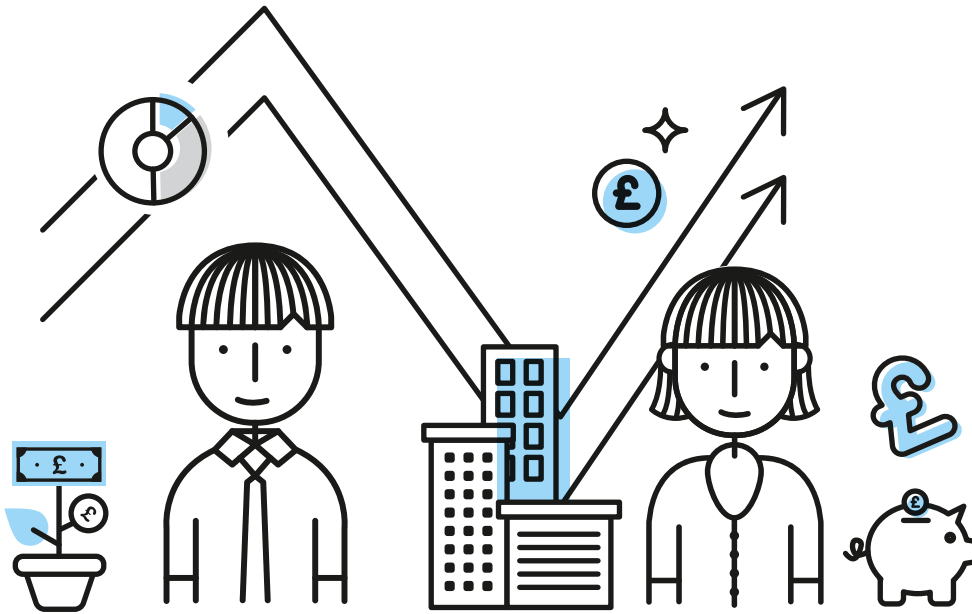
These were:

- The provision of additional information to the board on certain specific topics;
- To develop a comprehensive skills matrix for the board, to assist in future recruitment and to identify any potential current or future skills gaps;
- To set aside more time for the board to consider the culture of the company, to gain a more detailed understanding of the impact of culture on behaviours across the business.

An action plan has been developed and agreed by the board to address these matters and the actions taken, and progress made, will be reported in our Corporate Governance Statement for the year ended 31 March 2020.

In addition to the annual board evaluation, the chairman meets with each board member individually on at least an annual basis to discuss their own performance and to identify any areas for development or potential training needs. The senior independent director also gathers feedback separately on the performance of the chairman and feeds this back to him at least annually.

8. Regulatory information



In this section

The purpose of our regulatory financial information is for our stakeholders to understand how statutory financial accounting information, published under the Companies Act requirements, translates to the income, costs, assets, liabilities and cashflows of the appointed water and waste water business of Yorkshire Water Services Limited under regulatory accounting standards.

The section is structured as follows:

This regulatory information section contains specific financial and non-financial performance information that is required under the Regulatory Accounting Guidelines (RAGs) issued by Ofwat.

- i. Regulatory financial reporting takes information from published statutory financial statements and adjusts that information to take account of differences between statutory financial reporting in accordance with UK Generally Accepted Accounting Principles (UK GAAP) and Regulatory Accounting standards (RAGs). On adoption of new UK GAAP there was a choice between Financial Reporting Standards, FRS101 and FRS102. We have elected to report under FRS102.
- ii. Price control and other segmental reporting financial information, which sets out financial information by price control and underlying operational processes.
- iii. Performance summary for our performance commitments.
- iv. Additional regulatory information as required by Ofwat.
- v. Cost assessment tables providing information on the allocation of expenditure to different investment categories and information on the drivers of expenditure to support the development of cost models and comparative analysis.

Where further explanation of specific information is required, technical notes are included as appropriate.

Where specific reference is made to tables and lines within the tables, they will be shown in the commentary as either Table 1A Line 1 or 1A.1, for example.

Summary of our overall financial performance

The information on this page is as per the Annual Report and Financial Statements. Click here for a link yorkshirewater.com/reports

Our revenue (the income we receive for the services we provide) has increased to £1,059.2 (2017/2018: £1,026.7m). This is largely due to the inflationary annual price increase.

Revenue

This is the income received for services provided

2018/2019 £1,059.2m
(2017/2018 £1,026.7m)

Operating costs

These are the payments for the day to day operations of our business, such as operating and maintaining our network and treatment works, paying our staff and energy bills. These costs exclude exceptional items.

2018/2019 £795.3m
(2017/2018 £745.6m)

Operating costs are tightly managed. Total costs of £795.3 million (2018: £745.6 million) are in line with plan except for increased operating costs relating to extreme weather conditions experienced during the year. These costs exclude exceptional items.

Exceptional costs of £34.4 million are associated with the extreme weather conditions experienced during the year (£25.5m), operational mitigation for assets damaged in the 2015 floods (£6.3m), and legal and professional fees incurred in connection with the sale of the non-household retail business (£2.6m).

Operating profit

Profit, excluding exceptional items before interest and tax.

2018/2019 £263.9m
(2017/2018 £281.1m)

Adjusted EBITDA

This is an accounting term and is our earnings before interest, tax, depreciation, amortisation, and exceptional items

2018/2019 £570.6m
(2017/2018 £577.1m)

Capital expenditure

The amount spent to acquire, maintain and enhance assets and infrastructure to provide services to our customers.

2018/2019 £500.2m
(2017/2018 £426.7m)

The above movements in revenue and operating costs result in a decrease in adjusted EBITDA to £570.6 million (2018: £577.1 million).

Capital expenditure for 2018/2019 was £500.2 million (2018: £426.7 million), including £45.7m for our SAP refresh project. Year four of the current five-year AMP reports an underspend of £25.7 million against the business plan programme. This is largely due to the rephasing of projects, aimed at achieving upper quartile status in the water sector, into year five of the AMP. A further £12.5 million (2018: £18.4 million) of additional capital expenditure was incurred in 2018/2019 relating to the 2015 flood remediation.

i. Regulatory financial information

The information in this section comprises the following tables.

Table 1A: Income statement

Table 1B: Statement of comprehensive income

Table 1C: Statement of financial position

Table 1D: Statement of cash flows

Table 1E: Net debt analysis (appointed activities)

Table 1F: Financial flows

Where further explanation of specific information is required, technical notes are included as appropriate.

Whilst the statutory column is based on the Annual Report and Financial Statement, there are some presentational differences.

Table 1A – Income statement

For the 12 months ended 31 March 2019

Line description	Units	DPs	Statutory	Adjustments			Total appointed activities
				Differences between statutory and RAG definitions	Non-appointed	Total adjustments	
1A.1 Revenue	£m	3	1059.158	6.501	14.868	-8.367	1050.791
1A.2 Operating costs	£m	3	-837.778	-13.601	-13.121	-0.480	-838.258
1A.3 Other operating income	£m	3	2.874	0.000	0.000	0.000	2.874
1A.4 Operating profit	£m	3	224.254	-7.100	1.747	-8.847	215.407
1A.5 Other income	£m	3	5.284	10.321	0.140	10.181	15.465
1A.6 Interest income	£m	3	114.872	0.000	0.000	0.000	114.872
1A.7 Interest expense	£m	3	-246.873	-20.824	0.000	-20.824	-267.697
1A.8 Other interest expense	£m	3	0.000	0.000	0.000	0.000	0.000
1A.9 Profit before tax and fair value movements	£m	3	97.537	-17.603	1.887	-19.490	78.047

Key

Input cell Calculation cell

Please refer to RAG 4.08 - Guideline for the table definitions in the annual performance report for the reporting year 2018-2019

Table 1A – Income statement (continued)

For the 12 months ended 31 March 2019

Line description		Units	DPs	Statutory	Adjustments			Total appointed activities
					Differences between statutory and RAG definitions	Non-appointed	Total adjustments	
1A.10	Fair value gains/(losses) on financial instruments	£m	3	-247.226	0.000	0.000	0.000	-247.226
1A.11	Profit before tax	£m	3	-149.689	-17.603	1.887	-19.490	-169.179
1A.12	UK Corporation tax	£m	3	-16.534	0.000	-0.398	0.398	-16.136
1A.13	Deferred tax	£m	3	37.128	2.993	0.000	2.993	40.121
1A.14	Profit for the year	£m	3	-129.095	-14.610	1.489	-16.099	-145.194
1A.15	Dividends	£m	3	-79.496	0.000	0.000	0.000	-79.496
A - Tax analysis								
1A.16	Current year	£m	3	16.283	0.000	0.398	-0.398	15.885
1A.17	Adjustments in respect of prior years	£m	3	0.251	0.000	0.000	0.000	0.251
1A.18	UK Corporation tax	£m	3	16.534	0.000	0.398	-0.398	16.136
B - Analysis of non-appointed revenue				Non-appointed				
1A.19	Imported sludge	£m	3	0.000				
1A.20	Tankered waste	£m	3	-4.315				
1A.21	Other non-appointed revenue	£m	3	-10.553				
1A.22	Revenue	£m	3	-14.868				

Key

Input cell Calculation cell

Please refer to RAG 4.08 - Guideline for the table definitions in the annual performance report for the reporting year 2018-2019

Table 1A takes information from the statutory accounts and captures the adjustments needed to show the regulatory income statement for the appointed business. Adjustments include both differences between UK Generally Accepted Accounting Principles (UK GAAP) and Regulatory Accounting Guidelines (RAG), and the removal of non-appointed income and costs. The UK GAAP versus RAG differences are further detailed in the table below.

The appointed business is defined as the regulated activities of the appointee, that is those activities necessary to fulfil the functions and duties of a water and sewerage undertaker. The non-appointed business encompasses those activities where we are not a monopoly supplier, or the activity involves the optional use of an asset owned by the appointed business (examples include shared services to the Group and the treatment of tankered waste).

The 2018/2019 waste water income statement includes the residual financial impact of the December 2015 floods across Yorkshire, which significantly impacted the waste water operational asset base.

Operating costs include £34.4m of exceptional costs (2017/2018 £8.1m), of this £25.5m is associated with the severe weather conditions. The period of unusually low temperatures and heavy snowfall followed by a prolonged dry summer resulted in additional leakage costs attributable to increased 'find activity' and increased number of repair and maintenance jobs. A further £6.3m has been incurred in relation with the assets damaged in a flooding incident that occurred in December 2015 (2017/2018 £8.1m) and £2.6m due to legal and professional fees incurred for the planned sales of the Non-Household Retail business. These costs have been incurred as a result of events that are not expected to recur, and as such, classification as exceptional is appropriate.

While we have delivered operating cost efficiencies, in addition to flood mitigation operating costs, operating expenditure pressures arising from external factors include:

- Weather has also caused challenges to our leakage performance as the drying soil conditions have caused record levels of network bursts.
- Prolonged dry weather from June 2018 onwards resulted in consumer demand for water increase by close to 20 per cent resulting in rapid reservoir depletion in the absence of rain for recharge.
- Depletion rates of up to seven per cent per week of raw water stocks made careful management of resources essential.
- Non-commodity electricity prices escalating at rates greater than RPI allowed in the AMP6 determination, despite increases in electricity wholesale prices being mitigated through hedging.
- Increased insurance premiums due the significant claim resulting from the exceptional flooding event in December 2015.

- Increased imported commodity cost pressures, such as chemicals. As with other businesses we are seeing that the cost of buying from overseas businesses is increasing, which is commonly considered to be due to the effects of Brexit.
- An increase in employment costs due to insourcing of leakage detection staff in readiness for enhanced AMP7 regulatory targets starting in 2020.
- Enhanced levels of service investment has been made to improve some of the common performance commitments by increasing sewer rehabilitation, reducing backlog of jobs and job baskets and more focused investigations of the sewer network.
- Increase in contracted services costs to help prevent and mitigate pollution and compliance failures.

Yorkshire Water holds £1,289.0m notional value of inflation linked swaps on which the Company receives interest based on the London Interbank Offered Rate (LIBOR) and pays interest based on inflation (RPI).

The reduction in market expectations of future LIBOR has occurred without a compensating reduction in the market expectations of future RPI rates. This means that the future expectations of the net amount payable / receivable on the Company's inflation linked swaps (i.e. the LIBOR linked interest receivable versus the inflation linked interest payable) is lower than that assumed last year. This in turn is largely responsible for the £247.2m loss on the fair value on financial instruments shown in table 1A Line 10. As a result of a change in presentation this year, net fair value charges of £247.2m includes £87.1m in relation to the RPI uplift on inflation linked and interest rate swaps, which was previously included in interest payable.

A dividend of £79.5m was paid in the year to our parent company (2017/2018: £88.9m), broken down as follows:

	2019 £m	2018 £m
Gross dividends	79.5	88.9
Dividends used to make inter-company interest payments	(46.7)	(60.3)
Dividends used to pay head office costs and Kelda Finance interest	(32.8)	(28.6)
Dividends paid to the ultimate shareholders	-	-

'Dividends used to make inter-company interest payments' of £46.7m (2017/2018: £60.3m) were paid to Kelda Eurobond Co. Limited (a Kelda Group company). This is to enable Kelda Eurobond Co. Limited to pay Yorkshire Water interest (plus an element of capital- £8.1m) on two loans that Yorkshire Water has previously made to Kelda Eurobond Co. Ltd.

The Company's dividend policy is to:

- Deliver real growth in dividends recognising the management of economic risks, the continuing need for investment of profits in the business and to pay additional dividends which reflect efficiency improvement, and particularly improvements beyond those allowed in the determination of price limits.
- To pay dividends in respect of the non-regulated business reflecting the profitability of those activities.
- Where it is foreseeable that the Company will have sufficient profits available for distribution, to continue to pay annual dividends consistent with this policy. The Company can also pay special dividends as part of any capital reorganisation which the Board concludes to be in the best interests of the Company and complies with its obligations under its licence.

The Directors consider that the dividends paid in the year are in accordance with these principles.

Non-appointed revenue of £14.9m is primarily made up of £4.8m from Safemove (provides drainage and water searches for property buyers), £4.3m from imported tankered waste, £3.1m from Kelda Non-Regulated companies, £1.5m from our largest trade customer, Syngenta and £0.9m related to meter reading.

Technical notes

There has been a marginal over recovery of wholesale revenue of £2.671m (0.3%). The difference will be accounted for through the wholesale forecasting revenue incentive mechanism (WFRIM). We submitted a draft version of the WFRIM in July 2018 and will be updating this to reflect the actual outturn of 2018/2019 to allow any adjustments to be taken into account within the PR19 Final Determination.

The table below shows the detailed GAAP adjustments that are made to the income statement as detailed in the statutory accounts to derive the income statement for the appointed business. The net adjustment of £14.6m has increased from the previous year (£3.9m in 2017/2018) in relation to capitalised interest and the related depreciation charge. Assets under construction has increased from previous year, resulting in an increase in interest expense. The process for calculating depreciation of capitalised interest has changed and is now carried out in SAP within the Asset Accounting module. The process of migrating prior year capitalised interest values into Asset Accounting has resulted in a reduction in the depreciation charge arising from previous years' capitalised interest, compared with the simplified offline process used previously.

Line description		Units	Grants & Contribution Income	IFRIC 18 Adopted Sewers	Capitalisation of Interest and Related Depreciation	IFRS 15 Revenue Recognition	Total
Line 1A.1. Revenue	£m	3	-8.105	-2.216		16.822	6.501
Line 1A.2. Operating Costs	£m	3			3.221	-16.822	-13.601
Line 1A.5. Other Income	£m	3	8.105	2.216			10.321
Line 1A.7. Interest expense	£m	3			-20.824		-20.824
Line 1A.13. Deferred tax	£m	3			2.993		2.993
Total	£m	3	0.000	0.000	-14.610	0.000	-14.610

The most significant differences between statutory financial reporting in accordance with FRS 102 and regulatory financial reporting are:

- Grants and contribution income totalling £8.1m recognised in revenue for statutory reporting is reclassified in other income for regulatory financial reporting. As such, this is a presentational adjustment only.
- Adopted sewers income of £2.2m recognised in revenue for statutory reporting is reclassified in other income for regulatory financial reporting. As such, this is a presentational adjustment only.
- Interest that is capitalised, and the related depreciation, in the statutory accounts is removed for regulatory financial reporting. The adjustments increase the regulatory interest expense by £20.8m, reduce related asset depreciation by £3.2m and reduces the associated deferred tax debit by £2.9m. The net effect of this adjustment is a £14.6m decrease to the regulatory profit for the year.
- There has been a change in accounting estimate from the prior year in respect of revenue recognition from those household customers where payment is not considered probable. £16.8m of billed and unbilled amounts receivable, have not been recognised as revenue in the statutory accounts in the current year, on the basis that they are not probable of collection. This reduction in revenue is offset by a consequent reduction in the bad debt charge and bad debt provision of the same amount. In line with RAG guidelines, this adjustment has been reversed in the income statement for the appointed business.

Table 1B – Statement of comprehensive income

For the 12 months ended 31 March 2019

Line description		Units	DPs	Statutory	Adjustments			Total appointed activities
					Differences between statutory and RAG definitions	Non-appointed	Total adjustments	
1B.1	Profit for the year	£m	3	-129.095	-14.610	1.489	-16.099	-145.194
1B.2	Actuarial gains/(losses) on post employment plans	£m	3	0.000	0.000	0.000	0.000	0.000
1B.3	Other comprehensive income	£m	3	30.257	0.000	0.000	0.000	30.257
1B.4	Total comprehensive income for the year	£m	3	-98.838	-14.610	1.489	-16.099	-114.937

Key

Input cell
 Calculation cell
 Copy cell

Please refer to RAG 4.08 - Guideline for the table definitions in the annual performance report for the reporting year 2018-2019

The statement of comprehensive income sets out all items which result in a change to our balance sheet reserves. The statutory profit for the year of £129.1m is adjusted for other comprehensive income of £30.3m. This principally comprises a revaluation of fixed assets before taxation of £41.0m less related deferred tax on the revaluation of £7.0m, less the net effect of cash flow hedges amounting to £3.3m, less net movement on the pension scheme of £0.4m.

In respect of the fixed asset revaluation, we have a policy under FRS 102 of holding infrastructure assets (networks), residential properties, non-specialised properties and rural estates under a valuation model. The fair value of assets must be reviewed periodically under FRS 102.

The infrastructure assets have been revalued during the year resulting in an uplift in fair value of £43.9m. The valuation amount was established by reviewing the discounted cashflows of Yorkshire Water to establish the assets' value in use and cross referenced against recent market data regarding Regulated Capital Value (RCV) multiples realized in transactions of similar infrastructure businesses to make sure the valuation was not misaligned to market valuation.

The residential properties, non-specialised properties and rural estates have also been revalued during the year. The decrease in valuation has been incorporated into the financial statements and the resulting revaluation adjustments taken to the revaluation reserve to the extent a surplus was previously recognised. A revaluation loss of £2.9m, before deferred tax and adjustment for historical depreciation, was recognised in the revaluation reserve in the year ended 31 March 2019 (2017/2018: £nil). A charge of £0.3m was also recognised in operating expenses with respect to this valuation.

The cash flow hedges arise from energy price swaps which hedge our exposure to energy price risk by exchanging the day ahead index price of energy for a fixed price. These swaps meet the criteria to be designated as a cashflow hedge and the change in the fair value of the energy price swap of £3.3m has been recognised directly in reserves through the statement of comprehensive income.

There is a net actuarial movement on the pension scheme of £0.4m within Yorkshire Water. The defined benefit plan is a multi-employer scheme, and the sponsoring employer is Kelda Group Limited.

Table 1C – Statement of financial position

For the 12 months ended 31 March 2019

Line description	Units	DPs	Statutory	Adjustments			Total appointed activities	
				Differences between statutory and RAG definitions	Non-appointed	Total adjustments		
A - Non-current assets								
1C.1	Fixed assets	£m	3	7849.947	-122.004	3.205	-125.209	7724.738
1C.2	Intangible assets	£m	3	110.023	0.000	0.000	0.000	110.023
1C.3	Investments - loans to group companies	£m	3	965.848	0.000	0.000	0.000	965.848
1C.4	Investments - other	£m	3	2.245	0.000	0.000	0.000	2.245
1C.5	Financial instruments	£m	3	117.788	0.000	0.000	0.000	117.788
1C.6	Retirement benefit assets	£m	3	0.000	0.000	0.000	0.000	0.000
1C.7	Total non-current assets	£m	3	9045.851	-122.004	3.205	-125.209	8920.642
B - Current assets								
1C.8	Inventories	£m	3	3.104	0.000	0.000	0.000	3.104
1C.9	Trade & other receivables	£m	3	244.604	0.000	2.552	-2.552	242.052
1C.10	Financial instruments	£m	3	0.000	0.000	0.000	0.000	0.000
1C.11	Cash & cash equivalents	£m	3	48.169	0.000	0.000	0.000	48.169
1C.12	Total current assets	£m	3	295.877	0.000	2.552	-2.552	293.325
C - Current liabilities								
1C.13	Trade & other payables	£m	3	-251.087	0.000	-0.175	0.175	-250.912
1C.14	Capex creditor	£m	3	-102.023	0.000	0.000	0.000	-102.023
1C.15	Borrowings	£m	3	-662.805	0.000	0.000	0.000	-662.805
1C.16	Financial instruments	£m	3	0.000	0.000	0.000	0.000	0.000
1C.17	Current tax liabilities	£m	3	0.000	0.000	0.000	0.000	0.000
1C.18	Provisions	£m	3	-11.368	0.000	0.000	0.000	-11.368
1C.19	Total current liabilities	£m	3	-1027.283	0.000	-0.175	0.175	-1027.108
1C.20	Net current assets / (liabilities)	£m	3	-731.406	0.000	2.377	-2.377	-733.783

Table 1C – Statement of financial position (continued)

For the 12 months ended 31 March 2019

Line description	Units	DPs	Statutory	Adjustments			Total appointed activities	
				Differences between statutory and RAG definitions	Non-appointed	Total adjustments		
D - Non-current liabilities								
1C.21	Trade & other payables	£m	3	-1.886	0.000	0.000	0.000	-1.886
1C.22	Borrowings	£m	3	-4432.385	0.000	0.000	0.000	-4432.385
1C.23	Financial instruments	£m	3	-2094.725	0.000	0.000	0.000	-2094.725
1C.24	Retirement benefit obligations	£m	3	0.000	0.000	0.000	0.000	0.000
1C.25	Provisions	£m	3	0.000	0.000	0.000	0.000	0.000
1C.26	Deferred income - G&C's	£m	3	-295.225	-1.663	-2.030	0.367	-294.858
1C.27	Deferred income - adopted assets	£m	3	-163.811	9.656	0.000	9.656	-154.155
1C.28	Preference share capital	£m	3	0.000	0.000	0.000	0.000	0.000
1C.29	Deferred tax	£m	3	-357.001	20.741	0.000	20.741	-336.260
1C.30	Total non-current liabilities	£m	3	-7345.033	28.734	-2.030	30.764	-7314.269
1C.31	Net assets	£m	3	969.412	-93.270	3.552	-96.822	872.590
E - Equity								
1C.32	Called up share capital	£m	3	10.000	0.000	0.000	0.000	10.000
1C.33	Retained earnings & other reserves	£m	3	959.412	-93.270	3.552	-96.822	862.590
1C.34	Total equity	£m	3	969.412	-93.270	3.552	-96.822	872.590

Key

Input cell Calculation cell

Please refer to RAG 4.08 - Guideline for the table definitions in the annual performance report for the reporting year 2018-2019

Table 1C adjusts the Balance Sheet as at 31 March 2019 detailed in the statutory Annual Report and Financial Statements and makes adjustment for the differences between UK statutory financial reporting and regulatory financial reporting, together with removal of the non-appointed assets and liabilities. This then details the Balance Sheet of the appointed business.

The table below details the total adjustment of £93.3m to retained earnings and reserves and the corresponding adjustments to fixed assets, deferred income and deferred tax. This comprises the differences between statutory and RAG definitions which are the balance sheet equivalent adjustments to those income statement adjustments described in more detail previously on Table 1A.

Line description	Units	DPS	Grants & Contribution Income	IFRIC 18 Adopted Sewers	Capitalisation of Interest and Related Depreciation	IFRS 15 Revenue Recognition	Total
Line 1C.1 Fixed assets	£m	3			-122.004		-122.004
Line 1C.9 Trade and other receivables	£m	3				0.000	0.000
Line 1C.26 Deferred income - G&C's	£m	3	-1.663				-1.663
Line 1C. 27 Deferred income - adopted assets	£m	3		9.656			9.656
Line 1C. 29 Deferred tax	£m	3			20.741		20.741
Line 1C.33 Retained earnings & other reserves	£m	3	1.663	-9.656	101.263		93.270
Total	£m	3	0.000	0.000	0.000	0.000	0.000

Technical notes

As detailed in Table 1B and the statutory accounts, we hold infrastructure assets (networks), residential properties, non-specialised properties and rural estates under a revaluation model, rather than historical cost. Regulatory accounting guidance refers only to historical cost, however given that UK GAAP FRS102 offers the choice between historical cost and valuation, and the guidance does not identify the requirement to re-state fixed assets for those adjustments, no adjustment has been made. This is consistent with the treatment in 2017/2018.

Table 1D – Statement of cash flows

For the 12 months ended 31 March 2019

Line description	Units	DPs	Statutory	Adjustments			Total appointed activities	
				Differences between statutory and RAG definitions	Non-appointed	Total adjustments		
A - Statement of cashflows								
1D.1	Operating profit	£m	3	224.254	-7.100	1.747	-8.847	215.407
1D.2	Other income	£m	3	5.284	10.321	0.140	10.181	15.465
1D.3	Depreciation	£m	3	306.856	-3.221	0.348	-3.569	303.287
1D.4	Amortisation - G&C's	£m	3	0.000	0.000	0.000	0.000	0.000
1D.5	Changes in working capital	£m	3	-15.624	0.000	-0.319	0.319	-15.305
1D.6	Pension contributions	£m	3	0.000	0.000	0.000	0.000	0.000
1D.7	Movement in provisions	£m	3	0.000	0.000	-1.916	1.916	1.916
1D.8	Profit on sale of fixed assets	£m	3	-2.874	0.000	0.000	0.000	-2.874
1D.9	Cash generated from operations	£m	3	517.896	0.000	0.000	0.000	517.896
1D.10	Net interest paid	£m	3	-113.351	0.000	0.000	0.000	-113.351
1D.11	Tax paid	£m	3	-14.674	0.000	0.000	0.000	-14.674
1D.12	Net cash generated from operating activities	£m	3	389.871	0.000	0.000	0.000	389.871
C - Investing activities								
1D.13	Capital expenditure	£m	3	-548.323	0.000	0.000	0.000	-548.323
1D.14	Grants & contributions	£m	3	25.365	0.000	0.000	0.000	25.365
1D.15	Disposal of fixed assets	£m	3	3.241	0.000	0.000	0.000	3.241
1D.16	Other	£m	3	0.000	0.000	0.000	0.000	0.000
1D.17	Net cash used in investing activities	£m	3	-519.717	0.000	0.000	0.000	-519.717
1D.18	Net cash generated before financing activities	£m	3	-129.846	0.000	0.000	0.000	-129.846

Line description	Units	DPs	Statutory	Adjustments			Total appointed activities	
				Differences between statutory and RAG definitions	Non-appointed	Total adjustments		
D - Cashflows from financing activities								
1D.19	Equity dividends paid	£m	3	-79.496	0.000	0.000	0.000	-79.496
1D.20	Net loans received	£m	3	219.008	0.000	0.000	0.000	219.008
1D.21	Cash inflow from equity financing	£m	3	0.000	0.000	0.000	0.000	0.000
1D.22	Net cash generated from financing activities	£m	3	139.512	0.000	0.000	0.000	139.512
1D.23	Increase (decrease) in net cash	£m	3	9.666	0.000	0.000	0.000	9.666

Key

Input cell Calculation cell

Please refer to RAG 4.08 - Guideline for the table definitions in the annual performance report for the reporting year 2018-2019

We are not required to publish a cashflow statement in our statutory accounts. The cashflow information in Table 1D is derived from the published Profit and Loss account and Balance Sheet information. Similar to Tables 1A and 1C, Table 1D captures the adjustments needed to both reflect differences between statutory financial reporting in accordance with UK GAAP and regulatory financial reporting and remove non-appointed cashflows to determine the cashflow statement for the appointed business.

Overall, there was a net cash increase of £9.7m for 2018/2019. Cash generated from operations of £517.9m was primarily offset by:

- Cash investment in fixed assets of £548.3m. In 2018/2019 this has been presented including investment in intangible assets of £66.9m (2017/2018 £14.0m), previously disclosed in 'Other' (1D.16), as the Company believes this is a more accurate reflection of the RAGs.
- Interest paid of £113.4m on borrowings taken out to fund historical and current capital investment programmes.
- Dividends paid to fund interest on other borrowings taken out on behalf of Yorkshire Water elsewhere in the group and dividends to the owners of Yorkshire Water totalling £79.5m as detailed in Table 1A commentary.

Table 1E – Net debt analysis (appointed activities)

As at 31 March 2019

Line description		Units	DPs	Interest rate risk profile			
				Fixed rate	Floating rate	Index linked	Total
1E.1	Borrowings (excluding preference shares)	£m	3	2044.691	1339.350	1729.440	5113.481
1E.2	Preference share capital	£m	3				0.000
1E.3	Total borrowings	£m	3				5113.481
1E.4	Cash	£m	3				-35.463
1E.5	Short term deposits	£m	3				-12.706
1E.6	Net debt	£m	3				5065.312
1E.7	Gearing	%	2				75.75%
1E.8	Adjusted gearing	%	2				76.62%
1E.9	Full year equivalent nominal interest cost	£m	3	71.780	14.180	165.180	251.140
1E.10	Full year equivalent cash interest payment	£m	3	71.780	14.180	81.530	167.490
A - Indicative interest rates							
1E.11	Indicative weighted average nominal interest rate	%	2	3.51%	1.06%	9.55%	4.91%
1E.12	Indicative weighted average cash interest rate	%	2	3.51%	1.06%	4.71%	3.28%
1E.13	Weighted average years to maturity	nr	2	10.57	7.33	24.57	14.46

Key

 Input cell  Calculation cell

Please refer to RAG 4.08 - Guideline for the table definitions in the annual performance report for the reporting year 2018-2019

Table 1E contains information about our financing structure and the associated interest costs of that financing.

Interest payable and interest receivable on our borrowings is on either a fixed rate, floating rate or inflation linked basis and the company manages the issuance of new debt to ensure that Yorkshire Water's debt maturity profile avoids

repayment concentrations, meaning that we avoid the situation where large amounts of debt must be re-paid at the same time. This assists with the company's future refinancing requirements. Our debt has a weighted average years to maturity (line 1E.13) of approximately 14 years, which is consistent with the planned approach to the company's financing requirements.

The total borrowings amount in 1E.1 is not equal to those in table 1C in order to meet Ofwat's RAG guidance. The table below explains the differences between the two tables.

Reconciliation of borrowing amounts contained within table 1C (lines 15 & 22) to table 1E (line 1)	£m
Table 1C:	
1C.15 - Borrowings (Current liabilities)	(662.8)
1C.15 - Borrowings (Current liabilities)	(4,432.4)
Table 1C - Borrowings	(5,095.2)
Adjustments:	
(i) Fair value adjustments of bonds included in table 1C but not included in table 1E	96.3
(ii) Collatorised loan included in table 1C but not included in table 1E	12.7
(iii) RPI bullet repayment on inflation linked swaps (discounted) not included in table 1C but included in table 1E, in line with the 'single line of account' guidance in FRS 102.	(127.3)
Total adjustments	(18.31)
Table 1E - Borrowings	(5,113.5)

Table 1E row 7 contains Yorkshire Water's regulatory gearing, the calculation of which is "Net Debt" as provided in table 1E row 6, divided by the company's RCV as provided in table 4C row 5. However, Yorkshire Water also uses different measures of net debt to calculate gearing for the purposes of its financial covenants as contained within Yorkshire Water's Whole Business Securitisation financing structure (see "Appendix 4: Disclosures – Corporate structure" for an explanation of Yorkshire Water's Whole Business Securitisation structure) which are used by the financial community. Table 1E row 8 - Adjusted gearing, contains a restated measure of gearing (known as the Yorkshire Water Senior RAR, the definition of which is contained within the terms of Yorkshire Water's Whole Business Securitisation structure).

Actual and forecast amounts of Yorkshire Water's Senior RAR are published twice a year within Compliance Certificates (which is required as part of the terms of Yorkshire Water's Whole Business Securitisation structure). These can be found within the 'Investor Centre' section of the Kelda Group website at www.keldagroup.com.

The indicative weighted average nominal interest rates reported in table 1E line 11 and the indicative weighted average cash interest rates reported in table 1E line 12 were also submitted as part of Yorkshire Waters PR19 business plan table App20 - Cost of debt & analysis of debt. Differences between the figures provided in table 1E and in App20 are primarily due to movements to the principal sum outstanding as at 31 March 2018 and as that as at 31 March 2019 and the effect that these changes have on the resultant calculated interest rates. Movements to the principal sum outstanding are a result of the following:

- New debt issued/drawn during 2018/2019
- Debt maturing/repaid during 2018/2019
- Changes to inflation assumptions
- Accounting adjustments in table 1E but not in App20.

A reconciliation between the principal sum outstanding reported in table 1E and App20 is provided below.

	Totals for fixed rate instruments	Totals for floating rate instruments	Totals for RPI linked instruments	Total
	£m	£m	£m	£m
App20 - Principal sum outstanding as at 31 March 2018	1,908.0	1,292.6	1,697.9	4,898.5
New debt issued/ drawn during 2018/2019	150.0	105.0	125.4	380.4
Debt maturing/ repaid during 2018/2019	(20.4)	(54.0)	(129.7)	(204.1)
Changes to inflation assumptions			26.5	26.5
Accounting adjustments in table 1E but not in App20	7.1	(4.2)	9.3	12.2
Table 1E - Principal sum outstanding as at 31 March 2019	2,044.7	1,339.4	1,729.4	5,113.5

Technical notes

Yorkshire Water and its financing subsidiaries raise debt finance from a number of sources including, amongst other areas, bank debt, bond debt and finance leases. Any borrowings raised by Yorkshire Water's financing subsidiaries are on-lent to Yorkshire Water, with Yorkshire Water paying interest to those subsidiaries on the same terms as the financing subsidiaries have borrowed at. This is illustrated in the diagram below.

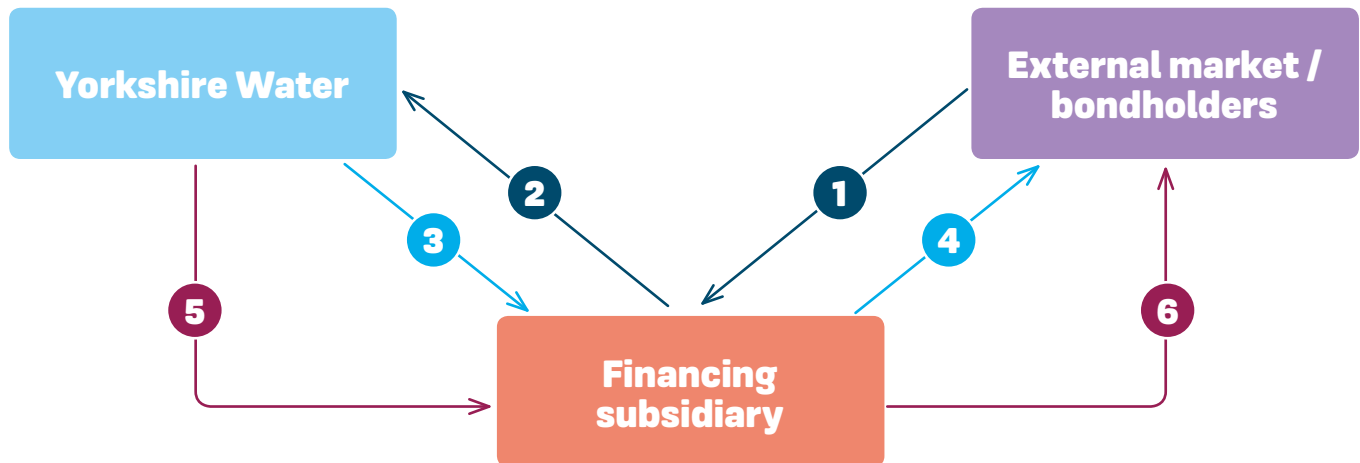


Illustration of borrowing by Yorkshire Water finance subsidiary and on-lending to Yorkshire Water

Key to the diagram above:

A. Debt raised

1. Financing subsidiary raises £100m fixed rate bond from the external market with a coupon payable of 5.0% per annum with a maturity of 10 years.
2. Financing subsidiary lends the £100m debt raised to Yorkshire Water.

B. Annual interest payments

3. Yorkshire Water pays £5m interest to Financing subsidiary on an annual basis.
4. Financing subsidiary pays £5m interest to external bond holders on an annual basis.

C. Debt repaid

5. Yorkshire Water pays back £100m to Financing subsidiary on maturity date.
6. Financing subsidiary repays bond holders £100m on maturity date.

1F - Financial flows (Price Base - 2012-2013 RPI Average)

For the 12 months ended 31 March 2019

				12 Months ended 31 March 2019			
Line description	Units	DPs	%			£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	
A							
1F.1	Return on regulatory equity	£m	3	5.65%	3.76%	5.65%	120.831
1F.2	Actual performance adjustment 2010-2015	£m	3	1.09%	0.73%	1.09%	23.311
1F.3	Adjusted Return on regulatory equity	£m	3	6.74%	4.49%	6.74%	144.142
1F.4	Regulatory equity	£m	3	2138.609	2138.609	1423.766	
B - Financing							
1F.5	Gearing	£m	3	0.00%	1.39%	2.09%	0.000
1F.6	Variance in corporation tax	£m	3	0.00%	-0.33%	-0.49%	0.000
1F.7	Group relief	£m	3	0.00%	0.00%	0.00%	0.000
1F.8	Cost of debt	£m	3	0.00%	0.99%	1.48%	0.000
1F.9	Hedging instruments	£m	3	0.00%	-1.24%	-1.86%	0.000
1F.10	Financing total	£m	3	6.74%	5.29%	7.95%	144.142
C - Operational Performance							
1F.11	Totex out / (under) performance	£m	3	0.00%	-0.49%	-0.73%	0.000
1F.12	ODI out / (under) performance	£m	3	0.00%	0.41%	0.62%	0.000
1F.13	Retail out / (under) performance	£m	3	0.00%	-0.60%	-0.90%	0.000
1F.14	Other exceptional items	£m	3	0.00%	0.00%	0.00%	0.000
1F.15	Operational performance total	£m	3	0.00%	-0.68%	-1.02%	0.000
1F.16	Total earnings	£m	3	6.74%	4.62%	6.93%	144.142
1F.17	RCV growth from RPI inflation	£m	3	3.06%	3.06%	3.06%	65.441
1F.18	Total shareholder return	£m	3	9.80%	7.68%	9.99%	209.584
1F.19	Net dividend	£m	3	4.00%	1.33%	1.99%	85.544
1F.20	Retained value	£m	3	5.80%	6.35%	8.00%	124.039
D - Dividends reconciliation							
1F.21	Gross dividend	£m	3	4.00%	3.21%	4.82%	85.544
1F.22	Interest received on intercompany loans	£m	3	0.00%	1.88%	2.83%	0.000
1F.23	Net dividend	£m	3	4.00%	1.33%	1.99%	85.544

Key

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		Average 2015-2019					
£m		%			£m		
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
80.443	80.443	5.65%	3.60%	5.65%	117.821	75.121	75.121
15.519	15.519	1.58%	1.01%	1.58%	32.948	21.007	21.007
95.962	95.962	7.23%	4.61%	7.23%	150.770	96.129	96.129
		2085.336	2085.336	1329.582			
29.694	29.694	0.00%	1.69%	2.64%	0.000	35.167	35.167
-6.971	-6.971	0.00%	-0.79%	-1.24%	0.000	-16.537	-16.537
0.000	0.000	0.00%	0.74%	1.16%	0.000	15.360	15.360
21.084	21.084	0.00%	0.52%	0.96%	0.000	10.881	12.733
-26.553	-26.553	0.00%	-1.56%	-2.99%	0.000	-32.628	-39.717
113.216	113.216	7.23%	5.20%	7.76%	150.770	108.372	103.135
-10.456	-10.456	0.00%	-0.13%	-0.20%	0.000	-2.614	-2.614
8.837	8.837	0.00%	0.43%	0.68%	0.000	9.002	9.002
-12.876	-12.876	0.00%	-0.36%	-0.57%	0.000	-7.600	-7.600
0.000	0.000	0.00%	0.00%	0.00%	0.000	0.000	0.000
-14.495	-14.495	0.00%	-0.06%	-0.09%	0.000	-1.212	-1.212
98.721	98.721	7.23%	5.14%	7.67%	150.770	107.160	101.923
65.441	43.567	2.58%	2.58%	2.58%	53.802	53.802	34.303
164.162	142.288	9.81%	7.72%	10.25%	204.571	160.961	136.226
28.355	28.355	4.00%	1.64%	2.58%	83.413	34.293	34.293
135.807	113.933	5.81%	6.07%	7.67%	121.158	126.668	101.933
68.656	68.656	4.00%	4.34%	6.80%	83.413	90.462	90.462
40.301	40.301	0.00%	2.69%	4.22%	0.000	56.169	56.169
28.355	28.355	4.00%	1.64%	2.58%	83.413	34.293	34.293

Table 1F has been developed by Ofwat to improve financial transparency. It aims to enable a comparison between actual financial flows to the company's investors under the actual capital structures which companies have adopted, and what they would have been under the structure Ofwat have used for setting the prices that customers pay.

In order to illustrate this difference in structures the table includes the following three columns:

- Notional returns and notional regulatory equity – The value column in £m represents the notional returns set by Ofwat as part of the PR14 final determination. The percentage column represents the notional return divided by the notional regulated equity, which is calculated based on Ofwat's PR14 notional equity level of 37.5%.
- Actual returns and notional regulatory equity – The value column in £m represents the actual returns earned by the Company. The percentage column represents the actual return divided by the notional regulated equity, which is calculated based on Ofwat's PR14 notional equity level of 37.5%.
- Actual returns and actual regulatory equity – The value column in £m represents the actual returns earned by the Company. The percentage column represents the actual return divided by our actual regulated equity, which is calculated based on our average level of equity for the year (25% for the current year)

As our actual regulated equity (25%) is lower than Ofwat's notional regulated equity (37.5%), the actual return on actual equity column in the table above will show different percentage returns for the same performance in £m terms. In our case, as we have higher leverage than Ofwat's notional company, any underperformance will adversely impact returns disproportionately for shareholders. Conversely, any outperformance will deliver proportionately greater returns.

Section A:

Table 1F Line 1. Return on regulatory equity

This value has been taken from the PR14 final determination weighted average cost of capital, this is 5.65% for the period 2015-2020. This was set by Ofwat in December 2014.

Table 1F Line 2. Actual performance adjustment 2010-2015

This has been calculated by taking the PR09 out / (under) performance adjustments contained within our PR14 final determination, divided by our regulated equity. The performance adjustments include values for:

- operating cost and capital expenditure efficiencies delivered during the 2010-2015 period.
- Revenue correction mechanism (RCM) adjustments for variations in allowed and actual revenues during the 2010-15 period.
- Totex menu additional income

Table 1F Line 3. Adjusted Return on regulatory equity

This is a calculated line.

Table 1F Line 4. Regulatory equity

Notional regulatory equity

This has been calculated as 62.5% of the average RCV value which was published within our final determination, this value was given as at 2012/2013 average prices and therefore no conversion was required.

Actual regulatory equity

This has been calculated using the actual average gearing level, using the opening and closing net debt as published within Table 1E of the APR.

As our gearing has been above the notional level of gearing of 62.5%, (on average within AMP6 our gearing has been 76%) our actual regulated equity is lower than the notional regulated equity.

Section B: Financing

Table 1F Line 5. Gearing

This has been calculated in line with Ofwat guidance, being the variance between the actual average gearing (using the opening and closing net debt as published within Table 1E of the APR) and the notional gearing, which is then multiplied by the variance in the cost of equity to debt.

The positive actual return of 2.09% in 2018/2019 and the cumulative impact over AMP6 of 2.64% is due to our gearing being higher than Ofwat's notional level of gearing and the favourable impact of replacing more expensive equity (5.6% cost of equity set by Ofwat as part of the PR14 FD) with cheaper debt (2.59% cost of debt set by Ofwat as part of the PR14 FD).

Whilst our gearing is higher than Ofwat's notional level of gearing our securitised structure protects customers and lenders, with a greater proportion of risk being transferred to our shareholders in exchange for this increased return. The tax benefit resulting from the increased interest costs arising from our more highly geared structure has been passed to our customers through a bill reduction.

Table 1F Line 6. Variance in corporation tax

This has been calculated in line with Ofwat guidance, the calculation is shown below:

	Price base	2015/2016	2016/2017	2017/2018	2018/2019
Tax allowance per PR14 FD	2012/2013 avg	1.4	6.8	5.1	5.8
Tax receivable / (payable) on current year profit/loss	2012/2013 avg	(12.2)	(18.1)	(6.5)	6.2
Prior year adjustments - HMRC	2012/2013 avg	2.4	-	-	-
Deferred capital allowances	2012/2013 avg	(24.2)	(6.9)	(6.9)	(19.0)
Variance in corporation tax	2012/2013 avg	(32.7)	(18.2)	(8.3)	(7.0)

Within the 2018/2019 year we have a tax loss of £6m prior to any adjustments made to capital allowances and the utilisation of group relief. This loss has primarily been caused by exceptional weather-related costs, further details of which are provided in table 4B.

This difference between Ofwat's forecast tax allowance and our actual tax for 2018/2019 of £12m has then been adjusted for deferred capital allowances of £19m resulting in the overall variance of £7m.

The average impact of the variation in tax across AMP6 is -1.24%, however this is offset by the average position on the group relief in line 1F.7 of 1.16%.

Table 1F Line 7. Group relief

This has been calculated in line with Ofwat guidance, the calculation is shown below:

		Price base	2015/2016	2016/2017	2017/2018	2018/2019
	Group relief utilised	2012/2013 avg	36.4	25.0	13	13
	Group relief paid	2012/2013 avg	-	-	(13)	(13)
Line 1F.7	Group relief	2012/2013 avg	36.4	25.0	-	-

From 2017/2018 all losses surrendered to Yorkshire Water by other group companies have been paid for in full at the current rate of corporation tax, so there is no financial benefit shown within the table. Prior to 2017/2018 we did not pay for group relief, resulting in the benefit shown within the above table.

Table 1F Line 8. Cost of debt

The cost of debt impact (excluding hedging instruments) has been calculated in line with Ofwat guidance.

The net actual interest paid as reported in table 1A has been adjusted for inter-company interest and then divided by our average net debt (using the opening and closing net debt as reported in table 1E) to calculate the actual nominal cost of debt. To ensure consistency with 2015/2016 to 2017/2018 calculations we have included the £87.10m which has been moved from table "1A.7 interest expense" to "1A.10 Fair value gains/(losses) on financial instruments". This adjustment is explained in the commentary for table 1A.

Average RPI within the year has then been deducted from the actual nominal cost of debt to calculate the actual real cost of debt.

The difference between the actual real cost of debt and the 2.59% that was included within the PR14 WACC is then calculated.

At PR14 Ofwat's assumed average RPI was 2.8%, in 2015/2016 and 2016/2017 the actual average RPI was below this level at 1.05% and 2.16% respectively; however, in 2017/2018 and 2018/2019 the actual average RPI's of 3.74% and 3.06% respectively have been above the forecast RPI. This means that a proportion of the positive variance shown within the cost of debt line for 2018/2019 is due to the movement in RPI. This is because the higher actual inflation results in a larger deduction to the actual nominal interest rate, resulting in a lower real rate which is then compared against Ofwat's real rate. We seek to mitigate this risk by having index-linked debt within our portfolio of debt.

Actual returns and notional regulated equity

The difference calculated above is then multiplied by the average RCV and the notional level of gearing (62.5%).

An adjustment is then made for corporation tax at the standard rate.

An adjustment is then made to exclude the element of this variance which is attributed to Hedging instruments, reported in line 4H.9.

Actual returns and actual regulated equity

The difference calculated above is then multiplied by the average RCV and the actual average level of gearing (using the opening and closing net debt reported in table 1E).

An adjustment is then made for corporation tax at the standard rate.

An adjustment is then made to exclude the element of this variance which is attributed to Hedging instruments, reported in line 4H.9.

We have noted that there appears to be an error within line 1F.8 column "Actual returns and notional regulatory equity", we believe that this should have been amended in the 29 May 2019 release of the APR data tables to an input cell. This would be in line with the update that was made for the cumulative position.

The value that would have been inputted is 17.562.

Table 1F Line 9. Hedging instruments

We have assessed the impact of our hedging instruments on our overall cost of debt. In the current year we have calculated that our hedging instruments have increased our overall nominal interest rate by 0.77% from 4.14% to the 4.91% stated in Table 1E.

We have noted that there appears to be an error within line 1F.9 column "Actual returns and notional regulatory equity", we believe that this should have been amended in the 29 May 2019 release of the APR data tables to an input cell. This would be in line with the update that was made for the cumulative position.

The value that would have been inputted is (22.117).

Table 1F Line 10. Financing total

This is a calculated cell.

Section C: Operational performance

Table 1F Line 11. Totex out / (under) performance

This is taken from the APR calculation for table 4H.5 RORE.

The negative return reflects the significant level of re-investment over and above cost efficiencies previously delivered, to improve operational performance for customers.

Table 1F Line 12. ODI out / (under) performance

This is taken from the APR calculation for table 4H.5 RORE.

The positive return reflects ODI rewards earned for delivering operating performance in excess of our PR14 performance commitments.

Table 1F Line 13. Retail out / (under) performance

This is taken from the APR calculation for table 4H.5 RORE.

Table 1F Line 14. Other exceptional items

This is taken from the APR calculation for table 4H.5 RORE.

Table 1F Lines 15 and 16. Operational performance total and Total earnings

This is a calculated cell.

Table 1F Line 17. RCV growth from RPI inflation

This is the average RPI for 2018/2019.

Table 1F Line 18. Total shareholder return

This is a calculated cell.

Table 1F Line 19. Net dividend

This is a calculated cell.

Actual dividends are lower as a result of our decision to reduce leverage to improve our financial resilience.

Table 1F Line 20. Retained value

This is a calculated cell.

Section D: Dividends reconciliation**Table 1F Line 21. Gross dividend**

We have included the gross dividends that were paid from the appointed company within the relevant years.

This has been deflated to 2012/2013 average prices.

Table 1F Line 22. Interest received on intercompany loans

We have included the value that the appointed company receives in the year on inter-company loans.

This has been deflated to 2012/2013 average prices.

Table 1F Line 23. Net dividend

This is a calculated cell.

ii. Price control and other segmental reporting

The information in this section comprises various financial analyses as required by Ofwat, with a brief description of significant variances compared to previous years:

Table 2A: Segmental income statement

Table 2B: Totex analysis wholesale water and wastewater

Table 2C: Operating cost analysis - retail

Table 2D: Historic cost analysis of tangible fixed assets - wholesale and retail

Table 2E: Analysis of 'grants and contributions' and land sales - wholesale

Table 2F: Revenue by customer type - household

Table 2G & 2H: Revenues by tariff type - non-household water and wastewater

Table 2I: Revenue analysis and wholesale control reconciliation

Table 2J: Infrastructure network reinforcement costs

Table 2K New connections reconciliation

Where further explanation of specific information is required, technical notes are included as appropriate.

Table 2A – Segmental income statement

For the 12 months ended 31 March 2019

Table 2A is a summary table showing retail and wholesale revenue and expenditure, including any recharges associated with principle use of assets.

Line description	Units	DPs	Retail		Wholesale		
			Household	Non-household	Water resources	Water network +	
2A.1	Revenue - price control	£m	3	64.678	10.989		438.486
2A.2	Revenue - non price control	£m	3	0.000	0.000		2.663
2A.3	Operating expenditure	£m	3	-58.970	-14.293	-29.140	-229.315
2A.4	Depreciation - tangible fixed assets	£m	3	-2.021	-1.801	-7.238	-105.500
2A.5	Amortisation - intangible fixed assets	£m	3	0.000	0.000	0.000	-0.944
2A.6	Other operating income	£m	3	0.000	0.000	0.201	0.115
2A.7	Operating profit before recharges	£m	3	3.687	-5.105		
A - Recharge in respect of 'principal use' assets							
2A.8	Recharges from other segments	£m	3	-2.856	-0.427	-0.716	-14.424
2A.9	Recharges to other segments	£m	3	2.098	0.000	0.000	0.000
2A.10	Operating profit	£m	3	2.929	-5.532		
2A.11	Surface water drainage rebates	£m	3				

Key

Input cell
 Calculation cell
 Copy cell

Please refer to RAG 4.08 - Guideline for the table definitions in the annual performance report for the reporting year 2018-2019

Wholesale					Total
Water total	Waste water network +	Sludge	Waste water total	TTT	
438.486	532.995		532.995	0.000	1047.148
2.663	0.980		0.980	0.000	3.643
-258.455	-167.088	-36.165	-203.253	0.000	-534.971
-112.738	-159.499	-15.083	-174.582	0.000	-291.141
-0.944	-11.202	0.000	-11.202	0.000	-12.146
0.316	2.558	0.000	2.558	0.000	2.874
69.328			147.496	0.000	215.407
-15.140	-11.769	-2.831	-14.600	0.000	-33.023
0.000	30.925	0.000	30.925	0.000	33.023
54.188			163.821	0.000	215.407
					0.346

The Thames Tideway Tunnel (TTT) column is not applicable to Yorkshire Water.

Table 2B – Totex analysis – wholesale water and wastewater

For the 12 months ended 31 March 2019

This table breaks down wholesale totex expenditure into the price controls required to be reported in accordance with the regulatory accounting guidelines specified by Ofwat. This is an aggregation of the information held in tables 4D and 4E, please see the commentary for these tables for more information if required.

Line description		Units	DPs	Water Resources
A - Operating expenditure				
2B.1	Power	£m	3	2.014
2B.2	Income treated as negative expenditure	£m	3	0.000
2B.3	Abstraction charges/discharge consents	£m	3	5.577
2B.4	Bulk supply/Bulk discharge	£m	3	3.867
2B.5	Other operating expenditure - renewals expensed in year (Infrastructure)	£m	3	0.000
2B.6	Other operating expenditure - renewals expensed in year (Non-Infrastructure)	£m	3	0.000
2B.7	Other operating expenditure - excluding renewals	£m	3	10.281
2B.8	Local authority and Cumulo rates	£m	3	7.401
2B.9	Total operating expenditure excluding third party services	£m	3	29.140
2B.10	Third party services	£m	3	0.000
2B.11	Total operating expenditure	£m	3	29.140
B - Capital Expenditure				
2B.12	Maintaining the long term capability of the assets - infra	£m	3	11.590
2B.13	Maintaining the long term capability of the assets - non- infra	£m	3	1.584
2B.14	Other capital expenditure - infra	£m	3	1.405
2B.15	Other capital expenditure - non-infra	£m	3	4.005
2B.16	Infrastructure network reinforcement	£m	3	0.000
2B.17	Total gross capital expenditure excluding third party services	£m	3	18.584
2B.18	Third party services	£m	3	0.000
2B.19	Total gross capital expenditure	£m	3	18.584
C - Grants and contributions				
2B.20	Grants and contributions	£m	3	0.185
2B.21	Totex	£m	3	47.539
D - Cash Expenditure				
2B.22	Pension deficit recovery payments	£m	3	0.000
2B.23	Other cash items	£m	3	0.000
E - Total				
2B.24	Totex including cash items	£m	3	47.539

Water network plus	Wastewater network plus	Sludge	TTT	Total
31.342	31.692	-1.731	0.000	63.317
-0.366	-0.440	-1.733	0.000	-2.539
0.077	6.732	0.180	0.000	12.566
0.023	0.000	0.000	0.000	3.890
0.000	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000
164.793	110.597	38.113	0.000	323.783
30.618	18.507	1.336	0.000	57.862
226.487	167.088	36.165	0.000	458.880
2.828	0.000	0.000	0.000	2.828
229.315	167.088	36.165	0.000	461.708
34.504	37.505	0.000	0.000	83.599
77.034	96.152	62.619	0.000	237.389
30.580	25.789	0.000	0.000	57.774
35.339	110.554	4.028	0.000	153.926
1.614	1.614	0.000	0.000	3.228
179.071	271.614	66.647	0.000	535.916
0.000	0.000	0.000	0.000	0.000
179.071	271.614	66.647	0.000	535.916
16.771	12.626	0.000	0.000	29.582
391.615	426.076	102.812	0.000	968.042
0.000	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000
391.615	426.076	102.812	0.000	968.042

Key
 Input cell

 Calculation cell

Please refer to RAG 4.08 - Guideline for the table definitions in the annual performance report for the reporting year 2018-2019

Overall totex

Overall totex in 2018/2019 is above the funding within the Final Determination (FD), with a significant increase in water service costs in 2018/2019 relating to the very dry and hot weather experienced during the summer of 2018. Waste water totex is also more than the FD although this mostly relates to a change in the timing of investment relating to changes made to the National Environment Programme (NEP) quality programme after the Final Determination. This has led to the overall waste water treatment works and sludge (bio resources) quality delivery programmes being realigned to ensure the investments at sites with differing quality drivers are delivered as one project. Most quality regulatory compliance dates are now the end of the AMP period in March 2020, and consequently expenditure will be higher towards the end of the AMP.

Operating expenditure

Summary

2018/2019 operating expenditure is higher than 2017/2018 operating expenditure. The main year-on-year increase relates exceptional clean water costs across most upstream services arising from the drought and hot weather in 2018, this was partially offset by a reduction in waste operating costs relating to flooding:

- The 'Beast from the East' cold weather was followed by severe and dry weather which both resulted in exceptionally high clean water operational costs of £25.5m in 2018/2019.
- The increased and ongoing operational sludge mitigation costs resulting from the severe floods in December 2015 have reduced by £1.8m from £8.1m in 2017/2018, to £6.3m in 2018/2019.

Another thorough review of operating cost allocations and SAP processes has been undertaken to strengthen our compliance with Regulatory Accounting Guidelines, and also facilitate more automation and control from the new SAP system which went live 1 July 2019. Whilst we have identified methods of increasing the future automation of the process, the previous processes and allocation methods were found to be robust and are unchanged from the previous APR submission.

Further explanation of significant operating expenditure movements for each of the four price controls (water resources, water networks plus, waste water network plus and sludge) are detailed below, together with technical notes.

Water resources

The increase in costs associated with Water resources is mainly associated with the exceptional dry and hot summer of 2018. Yorkshire Water's raw water network allows water to be pumped large distances across the region to optimise water resources. During the dry summer pumping costs significantly increased, with some drought alleviation costs. Apart from the weather event, there are no significant underlying year-on-year movements in operating expenditure associated with water resources.

Water Network Plus

This price control has seen a significant increase in operating costs from 2017/2018, which as per the water resources price control, is principally as a result of costs associated with the exceptional summer.

The majority of the increase in this price control are within treated water distribution. The 'Beast from the East' (24 Feb 2018 – 4 March 2018) winter event caused an increase in burst pipes (and consequently leakage) which required further expenditure. This was compounded by the 2018 drought where the dry weather caused dry soil to move and increase the number of burst pipes. Additional leakage inspectors were recruited to identify leaking pipes and additional repair and maintenance teams were recruited to fix identified leaks.

There were also increased costs within Water Production as customer demand increased, and more treated water was pumped around the region to ensure that water supply could be maintained across Yorkshire.

Wastewater network plus

The cost increase in this price control is broadly consistent between the sewage collection and sewage treatment upstream services. The sewage collection element increase is associated with the company's preparation to improve operational performance in readiness for enhanced AMP7 regulatory targets starting in 2020. Enhanced levels of service investment has been made to improve some of the common performance commitments by increasing sewer rehabilitation, reducing the backlog of jobs and job baskets and more focused investigations of the sewer network. Similarly, the increase in costs price control are also associated with sewage treatment due to upturn in consumables and contracted services to help mitigate pollution and compliance failures.

Bioresources

The reduction in operating costs for bio resources is due to the asset improvements made in this area. An unreliable and expensive incinerator frequently required mitigation costs in previous years and has been replaced by an anaerobic digestion plant which is more reliable, efficient and generates electricity. Furthermore, we have seen a reduction in the atypical expenditure (sludge mitigation costs) associated with the December 2015 floods, which has also contributed towards reduced operating costs year on year. All assets impacted by the December 2015 floods should be in service in the coming financial year.

Technical notes

The operating cost lines in the tables have not been adjusted to exclude the pension deficit contribution. This has already been thought through and different to the other Water and Sewerage Companies. This is because Yorkshire Water's defined Benefit scheme is accounted for under the FRS102 accounting standard which applies the same rules as a defined contribution scheme. Historical pension scheme deficit cannot be allocated between the different group entities. This results in all cash contributions being recognized as operating expenditure, including pension deficit contributions. The treatment by Yorkshire Water is different to most other WASC's who have adopted IFRS and are required to follow defined benefit pension scheme accounting, therefore excluding cash contributions in excess of the IAS 18 defined benefit pension cost from the operating expenditure. The unit rate shown on tables 4D and 4E is calculated using the operating costs line, therefore, Yorkshire Water's rate appear slightly higher than the other companies who exclude these pension contributions. We confirmed this approach with Ofwat last year and will continue this process until 2020.

Table 2C – Operating cost analysis - retail

For the 12 months ended 31 March 2019

Table 2C further breaks down the retail operating costs included in Table 2A into cost categories.

Line description		Units	DPs	Household	Non-Household	Total
Operating expenditure						
2C.1	Customer services	£m	3	21.832	3.425	25.257
2C.2	Debt management	£m	3	4.690	0.428	5.118
2C.3	Doubtful debts	£m	3	21.489	0.876	22.365
2C.4	Meter reading	£m	3	2.095	1.950	4.045
2C.5	Services to developers	£m	3		0.574	0.574
2C.6	Other operating expenditure	£m	3	8.864	7.040	15.904
2C.7	Total operating expenditure excluding third party services	£m	3	58.970	14.293	73.263
2C.8	Third party services operating expenditure	£m	3	0.000	0.000	0.000
2C.9	Total operating expenditure	£m	3	58.970	14.293	73.263
2C.10	Depreciation - tangible fixed assets	£m	3	2.021	1.801	3.822
2C.11	Amortisation - intangible fixed assets	£m	3	0.000	0.527	0.527
2C.12	Total operating costs	£m	3	60.991	16.621	77.612
2C.13	Debt written off	£m	3	16.006	0.876	16.882

Key

 Input cell  Calculation cell

Please refer to RAG 4.08 - Guideline for the table definitions in the annual performance report for the reporting year 2018-2019

Household retail operating costs

Household retail operating costs in 2018/19 have increased by £3.1m to £61m from £57.9m in 2017/18.

The three principal reasons for the increase relate to the weather and to doubtful debts:

- A portion of this increase relates to costs for customer service, as there has been an increase in the number of customer contacts due to the dry weather experienced in the year.
- The doubtful debt figure charge for 2018/19 is larger than previously, as there has been a reform of the benefits system by the Government (Universal Credit). This has resulted in a reduction in customers who use the Water Direct scheme (from the Department of Work and Pensions) to pay their water bills, and whose payment was more certain to be made.
- A rise in customer numbers of 13,000 throughout the year from 2.165m customer in 2017/18 to 2.178m in 2018/19 which has influenced the customer services costs.

There has been no material change to the metering costs or efficiency savings in the year.

Non-household retail operating costs

Non-household retail operating costs have increased to £16.6m in 2018/2019, an increase of £3.7m compared to £12.9m for 2017/2018. 70% of this increase (£2.6m) is due to the one-off costs associated with the sale of the retail non-household business.

The remaining increase in costs is within the General and Support costs, as felt across the business.



There has been no material change in the customer numbers, metering levels or efficiency savings for 2018/19 within Non-Household retail, these figures are comparable with the figures for 2017/18 with an exception of the sale (as above).

Table 2D – Historical cost analysis of tangible fixed assets – wholesale and retail

For the 12 months ended 31 March 2019

Line description	Units	DPs	Wholesale			
			Water resources	Water network plus	Wastewater network plus	
A - Cost						
2D.1	At 1 April 2018	£m	3	446.313	4886.132	5633.724
2D.2	Disposals	£m	3	-73.950	-325.659	-656.155
2D.3	Additions	£m	3	11.581	136.914	282.189
2D.4	Adjustments	£m	3	-1.815	19.704	23.132
2D.5	Assets adopted at nil cost	£m	3	0.000	0.000	7.208
2D.6	At 31 March 2019	£m	3	382.129	4717.090	5290.098
B - Depreciation						
2D.7	At 1 April 2018	£m	3	-143.287	-1884.448	-1804.429
2D.8	Disposals	£m	3	73.950	325.658	655.789
2D.9	Adjustments	£m	3	0.000	0.000	0.000
2D.10	Charge for the year	£m	3	-7.238	-105.500	-159.499
2D.11	At 31 March 2019	£m	3	-76.575	-1664.290	-1308.139
2D.12	Net book amount at 31 March 2019	£m	3	305.554	3052.801	3981.959
2D.13	Net book amount at 1 April 2018	£m	3	303.026	3001.684	3829.295
D - Depreciation charge for year						
2D.14	Principal services	£m	3	-7.238	-105.500	-159.499
2D.15	Third party services	£m	3	0.000	0.000	0.000
2D.16	Total	£m	3	-7.238	-105.500	-159.499

Key

 Input cell  Calculation cell

Please refer to RAG 4.08 - Guideline for the table definitions in the annual performance report for the reporting year 2018-2019

Table 2D analyses changes in the fixed assets of both wholesale and retail activities of Yorkshire Water.

Our accounting policies in relation to fixed assets and depreciation are set out in full in note 1 of the statutory Annual Report and Financial Statements which can be found on our reports page here:

www.yorkshirewater.com/reports

The table above details that the net book value of fixed assets at 31 March 2019 amounts to £7,725m, an increase

of £229m since the start of the year. This movement includes fixed asset additions of £472m less a depreciation charge in the year of £291m.

We will have seen an increase in additions in 2018/2019 as is typical of year 4 of an AMP period as we have seen significant investment in assets.

We see a significant increase in disposals, following an audit recommendation, that resulted in any assets with zero net book value disposed in 2018/2019.

Wholesale		Retail		Total
Sludge	TTT	Household	Non-Household	
569.719	0.000	76.621	13.990	11626.499
-39.059	0.000	-32.278	-1.550	-1128.652
40.223	0.000	1.070	0.077	472.055
0.000	0.000	0.000	0.000	41.021
0.000	0.000	0.000	0.000	7.208
570.883	0.000	45.413	12.518	11018.131
-232.476	0.000	-60.424	-5.471	-4130.535
39.061	0.000	32.277	1.550	1128.285
0.000	0.000	0.000	0.000	0.000
-15.083	0.000	-2.021	-1.801	-291.141
-208.498	0.000	-30.168	-5.722	-3293.391
362.384	0.000	15.245	6.796	7724.739
337.243	0.000	16.197	8.519	7495.964
-15.083	0.000	-2.021	-1.801	-291.141
0.000	0.000	0.000	0.000	0.000
-15.083	0.000	-2.021	-1.801	-291.141

Technical notes

As noted in Table 1C, Yorkshire Water elects under FRS102 to hold infrastructure and land/property assets at valuation rather than historic cost. In the year, due to a one off upward revaluation last year of £200m, we have seen a reduction in 2018/2019 in Table 2D.

Assets adopted at nil cost as detailed in Line 4 of Table 2D contains the value of sewers adopted at nil cost from customers.

Table 2E – Analysis of ‘grants and contributions’ and land sales – wholesale

For the 12 months ended 31 March 2019

Line description		Units	DPs	Current year	
				Full recognised in Income statement	Capitalised and amortised (in Income statement)
A - Grants and contributions - water					
2E.1	Connection charges	£m	3	0.000	7.838
2E.2	Infrastructure charge receipts	£m	3	0.000	4.705
2E.3	Requisitioned mains	£m	3	0.000	1.825
2E.4	Other contributions (price control)	£m	3	0.000	0.288
2E.5	Diversions	£m	3	0.000	2.300
2E.6	Other contributions (non-price control)	£m	3	0.000	0.000
2E.7	Total	£m	3	0.000	16.956
2E.8	Value of adopted assets	£m	3	0.000	0.000
B - Grants and contributions - wastewater					
2E.9	Infrastructure charge receipts	£m	3	0.000	4.980
2E.10	Requisitioned sewers	£m	3	0.000	1.431
2E.11	Other contributions (price control)	£m	3	0.000	5.094
2E.12	Diversions	£m	3	0.000	1.121
2E.13	Other contributions (non-price control)	£m	3	0.000	0.000
2E.14	Total	£m	3	0.000	12.626
2E.15	Value of adopted assets	£m	3	0.000	7.208
B - Grants and contributions - TTT					
2E.9	Infrastructure charge receipts	£m	3	0.000	0.000
2E.10	Requisitioned sewers	£m	3	0.000	0.000
2E.11	Other contributions (price control)	£m	3	0.000	0.000
2E.12	Diversions	£m	3	0.000	0.000
2E.13	Other contributions (non-price control)	£m	3	0.000	0.000
2E.14	Total	£m	3	0.000	0.000
2E.15	Value of adopted assets	£m	3	0.000	0.000
				Current year	
				Water	Wastewater
C - Movements in capitalised grants and contributions					
2E.16	Brought forward	£m	3	157.413	271.072
2E.17	Capitalised in year	£m	3	16.956	12.626
2E.18	Amortisation (in income statement)	£m	3	-6.153	-2.901
2E.19	Carried forward	£m	3	168.216	280.797
D - Land sales					
2E.20	Proceeds from disposals of protected land	£000	3	232.013	282.872

Please refer to RAG 4.08 - Guideline for the table definitions in the annual performance report for the reporting year 2018-2019

Current year	
Fully netted off capex	Total

0.000	7.838
0.000	4.705
0.000	1.825
0.000	0.288
0.000	2.300
0.000	0.000
0.000	16.956

0.000

0.000	4.980
0.000	1.431
0.000	5.094
0.000	1.121
0.000	0.000
0.000	12.626

7.208

0.000	0.000
0.000	0.000
0.000	0.000
0.000	0.000
0.000	0.000
0.000	0.000

0.000

Current year	
TTT	Total
0.000	428.485
0.000	29.582
0.000	-9.054
0.000	449.013
0.000	514.885

Table 2E provides information on capital contributions.

Capital grants and contributions totalling £17.0m on the water programme in the current year are higher than that allowed in the Final Determination (FD). Capital contributions to date this AMP totalling £59.4m are again higher than that allowed in the FD. Most of the grants and contributions' income is from either service diversions or new developments and connections but there has been a small amount of income received in other areas of the programme totalling £0.3m in the current report year. In the AMP we have seen a reduction in the overall requests for both mains diversions and new domestic connections than that identified in the FD. This, along with a reduction to our water infra connection charge, in line with the new agreed charging arrangements at the start of the current report year, has led to a further reduction in income when compared to the FD. However, these reductions have been offset by the inclusion of Section 45 new water connections income which were not included within in the FD which total £29.6m to date.

Capital contributions totalling £12.6m on the wastewater programme in the current year are lower than that allowed in the FD. Capital contributions to date this AMP totalling £37.7m are again lower than that allowed in the FD. Usually most of all grants and contributions income is collected from either service diversions or new developments and connections but there has been additional income received on other areas of the programme totalling £5.1m in the current year. This relates to income received from developers wanting to utilise our existing WwTW site at Stocksbridge for further new development. This is a site where we have a new quality obligation, so this income has been allocated against sewage treatment base and other drivers to reflect the solution being delivered. In the AMP period we have seen a reduction in the overall requests for both sewer diversions and new domestic connections than that identified in the FD. This along with a reduction to our wastewater infra connection charge, in line with the new agreed charging arrangements at the start of the current report year, has led to a further reduction in income when compared to the FD.

Movement in capitalised grants and contributions is broadly aligned to previous years. The increase in land sales is primarily associated with Knostrop STW.

Key

Input cell Calculation cell Copy cell

Table 2F – Household – revenues by customer type

For the 12 months ended 31 March 2019

Line description		Wholesale charges revenue £m	Retail revenue £m	Total revenue £m	Number of customers (000s)	Average household retail revenue per customer £
2F.1	Unmeasured water only customer	12.883	0.767	13.650	56.124	14
2F.2	Unmeasured wastewater only customer	14.528	0.856	15.384	59.976	14
2F.3	Unmeasured water and wastewater customer	370.261	25.513	395.773	882.784	29
2F.4	Measured water only customer	8.239	0.776	9.014	53.512	14
2F.5	Measured wastewater only customer	9.364	0.772	10.136	53.079	15
2F.6	Measured water and wastewater customer	319.513	35.993	355.507	1072.363	34
2F.7	Total	734.789	64.677	799.465	2177.838	30

Key

Input cell Calculation cell

Please refer to RAG 4.08 - Guideline for the table definitions in the annual performance report for the reporting year 2018-2019

Table 2F contains analysis of household retail revenues and customer numbers by customer type.

The total revenue received from household customers for the year 2018/2019 was £799.465m compared to £768.081m in 2017/2018, an increase of £31.384m (4.09%).

The total wholesale revenue received in 2018/2019 was £734.789m compared to £704.567m for 2017/2018, an increase of £30.222m (4.29%). Variances from the value of wholesale revenue assumed at the Final Determination are contained in Table 2I.

The total retail received in 2018/2019 was £64.677m compared to £63.514m for 2017/2018, an increase of £1.163m (1.83%). This is in line with the forecasted increase.

The number of household customers in 2018/2019 was 2,177,838 compared to 2,164,756 customers in 2017/2018, an increase of 13,082 (0.60%).

The average household retail revenue received per customer for 2018/2019 was £29.70 compared to £29.34 in 2017/2018, an increase of £0.36 (1.21%).

Table 2G – Non-household water – revenues by customer type

For the 12 months ended 31 March 2019

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						
2G.1	Total non-default tariffs	0.000	0.000	0.000	0.000	0
B - Default tariffs						
2G.2	n/a	0.000	0.000	0.000	0.000	0
2G.3	n/a	0.000	0.000	0.000	0.000	0
2G.4	n/a	0.000	0.000	0.000	0.000	0
2G.5	n/a	0.000	0.000	0.000	0.000	0
2G.6	Water unmetered	1.054	0.314	1.368	18.707	17
2G.7	Water 0 - 5 MI	47.339	4.841	52.180	93.632	52
2G.8	Water supplies 5 to 50 MI	23.238	0.871	24.109	1.560	558
2G.9	Water supplies 50 MI and over	28.339	0.015	28.354	0.141	106
2G.10				0.000		0
2G.11				0.000		0
2G.12				0.000		0
2G.13				0.000		0
2G.14				0.000		0
2G.15				0.000		0
2G.16				0.000		0
2G.17				0.000		0
2G.18				0.000		0
2G.19				0.000		0
2G.20				0.000		0
2G.21	Total default tariffs	99.970	6.041	106.011	114.040	53
2G.22	Total	99.970	6.041	106.011	114.040	53
C - Revenue per customer					Number of customers (000s)	Average non-household retail revenue per customer £
2G.23	Total				101.121	60

Key
 Input cell
  Calculation cell

Please refer to RAG 4.08 - Guideline for the table definitions in the annual performance report for the reporting year 2018-2019

Table 2G contains an analysis of non-household water revenues and customer numbers by customer type.

The total revenue received from non-household water customers for the year 2018/2019 was £106.011m compared to £103.866m in 2017/2018, an increase of £2.145m (2.07%). This nominal net increase in revenue resulted from a number several contributory factors, as set out below.

The primary driver for the revenue increase was the additional consumption through the summer of 2018; one of the hottest summers on record for the UK. This increased consumption and correspondingly billed revenue was up.

In addition, further increases in billed revenue from the reducing customer base, resulted from a data improvement initiative within the non-household retail business (Yorkshire Water Business Services). The initiative identified data improvements and improvements to the likes of fixed charge descriptions. Some of these improvements related back to the opening of the market. The resulting tariff adjustments resulted in the received revenues increasing sufficiently to more than offset the reducing customer base set out below.

As part of our data improvement initiative, we undertook a detailed review of meters for which it has been challenging to obtain a read. This revealed a variety of reasons for the difficulties in obtaining reads. For example, some customers who have had their meters removed, this has not been correctly logged and who subsequently do not wish, revert back to a metered charge. Similarly, some customers have had their meter surfaced over by highway reinstatement work and do not wish to revert back to a measured charge. These customers were moved onto an unmeasured tariff, with their billing going forward based on available historical usage. This resulted in the increased number of customers being charged on an unmeasured basis over the last year.

The total water wholesale revenue received from non-households in 2018/2019 was £99.970m compared to £98.269m in 2017/2018, this is an increase of £1.701m (1.73%). Variances from the value of wholesale revenue assumed at the Final Determination are contained in Table 2I.

The total water retail revenue received from non-households in 2018/2019 was £6.041m compared to £5.597m for 2017/2018, this is an increase of £0.444m (7.93%).

The number of non-household water customers was 114,040 compared with 123,073 customers in 2017/2018, a reduction of 9,033 (7.34%). The reported customer base reduction was driven increased market competition.

The relationship between the reduction in number of water and waste water customers (Table 2H) is not one-to-one. This is important to recognise that a significant number of customers within the area served by Yorkshire Water have only one service or the other, but not both water and waste water. For example, there are agricultural troughs with clean water consumption only, some larger industrial customers who have their own waste processing and disposal provision and there are 'cross-border' customers requiring only waste services, for example in the Chesterfield area where there has been a large historic overlap between Severn Trent and Yorkshire Water in service provision. As such, whilst there is a general consistency in the loss of water and waste water customers/connections, we observe an as expected difference between the two services.

Please note that due to non-household customers choosing to no longer receive their retail services through Yorkshire Water Business Services, the total wholesale water revenue in this table does not equal the sum of lines 1 and 2 in Table 2I, a reconciliation is provided within the commentary of Table 2I.

Table 2H – Non-household wastewater - revenues by customer type

For the 12 months ended 31 March 2019

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						
2H.1	Total non-default tariffs	0.000	0.000	0.000	0.000	0
B - Default Tariffs						
2H.2	n/a	0.000	0.000	0.000	0.000	0
2H.3	n/a	0.000	0.000	0.000	0.000	0
2H.4	n/a	0.000	0.000	0.000	0.000	0
2H.5	n/a	0.000	0.000	0.000	0.000	0
2H.6	n/a	0.000	0.000	0.000	0.000	0
2H.7	n/a	0.000	0.000	0.000	0.000	0
2H.8	n/a	0.000	0.000	0.000	0.000	0
2H.9	Sewerage unmetered	1.379	0.216	1.595	15.685	14
2H.10	Wastewater 0 - 5 MI	52.388	3.093	55.481	76.896	40
2H.11	Trade Effluent 0 - 5 MI	2.464	0.189	2.653	1.727	109
2H.12	Wastewater services 5 to 50 MI	23.014	0.460	23.474	1.119	411
2H.13	Wastewater services 50 MI and over	27.551	0.523	28.074	0.056	9339
2H.14				0.000		0
2H.15				0.000		0
2H.16				0.000		0
2H.17				0.000		0
2H.18				0.000		0
2H.19				0.000		0
2H.20				0.000		0
2H.21				0.000		0
2H.22				0.000		0
2H.23				0.000		0
2H.24	Total default tariffs	106.796	4.481	111.277	95.483	47
2H.25	Total	106.796	4.481	111.277	95.483	47

Key
 Input cell
  Calculation cell

Please refer to RAG 4.08 - Guideline for the table definitions in the annual performance report for the reporting year 2018-2019

Table 2H – Non-household wastewater - revenues by customer type (Continued)

For the 12 months ended 31 March 2019

Line description		Number of customers (000s)	Average non-household retail revenue per customer £
C - Revenue per customer			
2H.26	Total	98.248	46

Key

Input cell Calculation cell

Please refer to RAG 4.08 - Guideline for the table definitions in the annual performance report for the reporting year 2018-2019

Table 2H contains analysis of non-household waste water revenues and customer numbers by customer type.

The total revenue received from non-household waste water customers in 2018/2019 was £111.277m compared to £113.821m in 2017/2018, a reduction of £2.544m, (2.24%). This was due to a reduction in customers as set out below.

The total waste water wholesale revenue received from non-household customers in 2018/2019 was £106.796m compared to £108.414m in 2017/2018, a reduction of £1.618m (1.49%). Variances from the amount of wholesale revenue assumed at the Final Determination are contained in Table 2I.

The total waste water retail revenue from non-household customers in 2018/2019 was £4.481m compared to £5.407m for 2017/2018, a reduction of £0.926m (17.13%). This was due to a reduction in customers as set out below

As discussed in the commentary to Table 2G, during 2018/2019 the non-household retail business (Yorkshire Water Business Services) undertook a data improvement initiative. This reviewed several data areas to align calculation assumptions resulting in improvements to market data.

Predominantly, these resulted in minor improvements to billing data accuracy, which produced both additional billing opportunities in 2018/2019 over 2017/2018 and reduced billing in the latter year to reflect any reductions. For example, the initiative identified that the default Return to Sewer (RTS) factor built into customers' waste water charge calculation had been set at 100% throughout 2017/2018. As the analysis also showed that this RTS factor should have been set at 95% these were reduced, leading to a reduction in billed revenue. This included a reduction to offset to account for the prior year.

Rateable values were revisited, dating back to the original data migration work. The resulting improvements produced both increases and decreases in the billing of revenue in 2018/2019.

Surface Water Drainage areas were also revisited and updated. In cases where these had been applied to building

roof area, car park car, etc. which had been subsequently extended since the original assessment billed revenues have increased to reflect the larger liability. Where the opposite is the case the billed revenues have fallen.

The overall impact of these and other changes including the reduced customer base is that revenues have fallen in 2018/2019, however this was not directly proportional to the reduction in the customer base, as we would expect.

The number of non-household waste water customers was 95,483 compared to 106,319 customers in 2017/2018, a reduction of 10,836 (10.19%). The retail market has seen customers move to new retailers offering incentives. This along with the number of void properties has seen a decline in the customer numbers. Whilst the overall customer numbers have reduced, waste water customers within the 5 to 50 MI band and 50 MI and over volumetric band have marginally increased. The main driver for this increase was the hot summer and increased consumption leading to a higher waste volume disposal

As commented on in Table 2G, The relationship between the reduction in number of water and waste water customers is not one-to-one. This is important to recognise that a significant number of customers within the area served by Yorkshire Water have only one service or the other, but not both water and waste water. For example, there are agricultural troughs with clean water consumption only, some larger industrial customers who have their own waste processing and disposal provision and there are 'cross-border' customers requiring only waste services, for example in the Chesterfield area where there has been a large historic overlap between Severn Trent and Yorkshire Water in service provision. As such, whilst there is a general consistency in the loss of water and waste water customers/connections, we observe an as expected difference between the two services.

Please note that due to non-household customers choosing to no longer receive their retail services through Yorkshire Water Business Services, the total wholesale water revenue in this table does not equal the sum of lines 5 and 6 in Table 2I, a reconciliation is provided within the commentary of Table 2I.

Table 21 – Revenue analysis and wholesale control reconciliation

For the 12 months ended 31 March 2019

Line description		Units	DPs	Household	Non-household	Total
A - Wholesale charge - water						
21.1	Unmeasured	£m	3	181.187	1.084	182.271
21.2	Measured	£m	3	145.272	110.943	256.215
21.3	Third party revenue	£m	3	0.000	0.000	0.000
21.4	Total	£m	3	326.459	112.027	438.486
B - Wholesale charge - wastewater						
21.5	Unmeasured	£m	3	216.485	3.768	220.253
21.6	Measured	£m	3	191.845	118.678	310.523
21.7	Third party revenue	£m	3	0.000	2.219	2.219
21.8	Total	£m	3	408.330	124.665	532.995
B - Wholesale charge - TTT						
21.5	Unmeasured	£m	3	0.000	0.000	0.000
21.6	Measured	£m	3	0.000	0.000	0.000
21.7	Third party revenue	£m	3	0.000	0.000	0.000
21.8	Total	£m	3	0.000	0.000	0.000
21.9	Wholesale Total	£m	3	734.789	236.692	971.481
C - Retail revenue						
21.10	Unmeasured	£m	3	27.137	0.530	27.667
21.11	Measured	£m	3	37.541	9.992	47.533
21.12	Other third party revenue	£m	3	0.000	0.467	0.467
21.13	Retail total	£m	3	64.678	10.989	75.667
D - Third party revenue - non-price control						
21.14	Bulk Supplies - water	£m	3			0.118
21.15	Bulk Supplies - wastewater	£m	3			0.000
21.16	Other third party revenue	£m	3			3.398
E - Principal services - non-price control						
21.17	Other appointed revenue	£m	3			0.127
21.18	Total appointed revenue	£m	3			1050.791

Key
 Input cell
 Calculation cell

Please refer to RAG 4.08 - Guideline for the table definitions in the annual performance report for the reporting year 2018-2019

Line description	Units	DPs	Water	Wastewater	TTT	Total	
E - Principal services - non-price control							
21.19	Wholesale revenue governed by price control	£m	3	438.486	532.995	0.000	971.481
21.20	Grants & contributions	£m	3	14.656	11.504	0.000	26.160
21.21	Total revenue governed by wholesale price control	£m	3	453.142	544.499	0.000	997.641
21.22	Amount assumed in wholesale determination	£m	3	446.752	545.197	0.000	991.949
21.23	Adjustment for in-period ODI revenue	£m	3	0.000	0.000	0.000	0.000
21.24	Adjustment for WRFIM	£m	3	-4.790	-2.246	0.000	-7.036
21.25	Total assumed revenue	£m	3	441.962	542.951	0.000	984.913
21.26	Difference	£m	3	11.180	1.548	0.000	12.728

Wholesale price control adjustments

Table 21 calculates the difference within the wholesale water and waste water price controls between actual revenue received and revenue allowed at the Final Determination.

We continue to note that inconsistencies between the categories of revenue and capital contributions which we are asked to report by within Table 21 and those which were included within our price controls at the Final Determination leads to an incorrect level of variance being reported within line 21.26. The table below captures the adjustments we are required to make to allow the actual revenues and capital contribution to be compared consistently with the Final Determination. This method of disclosure has been previously agreed with Ofwat.

Line description	Units	DPs	Water	Wastewater	Total	
21.19	Wholesale revenue governed by price control	£m	3	438.486	532.995	971.481
21.20	Grants and contributions	£m	3	14.656	11.504	26.160
21.21	Total revenue governed by wholesale price control	£m	3	453.142	544.499	997.641
	Less: third party revenue line 21.7 (s104)	£m	3	0.000	-2.219	.2.219
	Less: capital contributions connection charges s45	£m	3	-7.838	0.000	-7.838
	Total revenue governed by wholesale price control - adjusted	£m	3	445.304	542.280	987.584
21.22	Amount assumed in wholesale determination	£m	3	446.752	545.197	991.949
21.23	Adjustment for the in-period ODI revenue	£m	3	0.000	0.000	0.000
21.24	Adjustment for WRFIM	£m	3	-4.790	-2.246	-7.036
21.25	Total assumed revenue	£m	3	441.962	542.951	984.913
21.26	Difference - adjusted revenue	£m	3	3.342	-0.671	2.671
	Difference - adjusted revenue	%	3	0.76%	-0.12%	-0.27%

The adjustment for wholesale water is:

- Reduction of £7.838m of grants and contributions for 'connection charges (s45)', which were not included within the PR14 wholesale water revenue control.
- We submitted further evidence to support this adjustment, as requested by Ofwat, within our PR19 IAP response on the 1 April 2019. See page 142 of the IAP response below: <https://www.yorkshirewater.com/sites/default/files/Yorkshire%20Water%20IAP%20response%20document.pdf>

The adjustment for wholesale wastewater is:

- Reduction of £2.219m of third-party revenue for s104 income, this was a reporting change made by Ofwat in this APR document, this revenue was not included within our final determination.
- We submitted further evidence to support this adjustment, as requested by Ofwat, within our PR19 IAP response on the 1 April 2019. See page 142 of the IAP response below: <https://www.yorkshirewater.com/sites/default/files/Yorkshire%20Water%20IAP%20response%20document.pdf>

Wholesale water price control

The total wholesale water revenue governed by price control, after the adjustments, in 2018/2019 is £445.304m. Compared to the total assumed revenue of £441.962m, a difference of £3.342m – 0.76%.

We have analysed the £3.342m, at a high level we have over recovered wholesale main charges by £8m and under recovered grants and contributions by (£5m). The £8m over recovery in wholesale charges is mainly due to the extra consumption which resulted from the 2018/2019 exceptional weather events, this has been offset by a larger demand for domestic meter optants, lower new connections and a higher increase in voids than was forecast within the tariff setting process.

The difference will be taken into account through the wholesale forecasting revenue incentive mechanism

(WFRIM). We submitted a draft version of the WRFIM in July 2018 and will be updating this to reflect the actual outturn of 2018/2019 to allow any adjustments to be considered within the PR19 Final Determination.

Wholesale waste water price control

The total wholesale waste water revenue governed by price control, after the adjustments, in 2018/2019 is £542.280m. Compared to the total assumed revenue of £542.951m, a difference of (£0.671m) – (0.12%).

We have analysed the (£0.671m), at a high level we have under recovered wholesale main charges by (£5m) and over recovered grants and contributions by £4m. The (£5m) under recovery in wholesale charges is mainly seen within the non-household market and is due to reduced volumes. However higher domestic meter optants, lower new connections and a higher increase in voids than was forecast within the tariff setting process has also contributed to the under recovery.

The difference will be accounted for through the wholesale forecasting revenue incentive mechanism (WFRIM). We submitted a draft version of the WRFIM in July 2018 and will be updating this to reflect the actual outturn of 2018/2019 to allow any adjustments to be taken into account within the PR19 Final Determination.

Reconciliation of non-household wholesale revenue

The guidance for the APR 2018 states that the value of wholesale water revenue and non-household wastewater revenue, shown on tables 2G and 2H respectively, should tie back to the total non-household wholesale revenue shown on table 2I.

However, since the opening of the non-household retail market on the 1 April 2017 customers have chosen to no longer receive their retail services from Yorkshire Water, and so the wholesale revenues associated with these customers are not shown on tables 2G and 2H.

The following table shows the variance:

	NHH wholesale water	NHH wholesale wastewater	Total NHH wholesale revenue
2I	112.027	122.445	234.472
2G and 2H	99.970	106.796	206.766
Variance: External retailers	12.057	15.649	27.706

This method of disclosure has been agreed with Ofwat.

Table 2J – Infrastructure network reinforcement costs

For the 12 months ended 31 March 2019

Line description		Units	DPs	Network reinforcement capex	On site/site specific capex (memo only)
A - Wholesale water network plus (treated water distribution)					
2J.1	Distribution and trunk mains	£m	3	1.434	0.000
2J.2	Pumping and storage facilities	£m	3	0.180	0.000
2J.3	Other	£m	3	0.000	0.000
2J.4	Total	£m	3	1.614	0.000
B - Wholesale wastewater network plus (sewage collection)					
2J.5	Foul and combined systems	£m	3	1.614	0.000
2J.6	Surface water only systems	£m	3	0.000	0.000
2J.7	Pumping and storage facilities	£m	3	0.000	0.000
2J.8	Other	£m	3	0.000	0.000
2J.9	Total	£m	3	1.614	0.000

Key

 Input cell  Calculation cell

Please refer to RAG 4.08 - Guideline for the table definitions in the annual performance report for the reporting year 2018-2019

A new process has been developed to ensure that we now capture any off-site network reinforcement costs that are required. This has resulted in the creation of new investment categories to capture and report this expenditure. The costs allocated to these investment categories have then been used to populate this table, however this is a new process and work is ongoing to ensure that all off-site costs are being captured and reported.

The water infrastructure network reinforcement expenditure totalling £1.591m within the year relates to the network reinforcement of mains and service reservoirs in Harrogate, Luddenden Foot, Farndale, Boston Park and Sneaton Castle.

The wastewater infrastructure network reinforcement expenditure totalling £1.614m relates to phase one of a scheme south of Sheffield Parkway to deliver the necessary infrastructure for a development of 3,250 properties. Phase one relates to the creation of a twinned rising main section (1 - 1.1km).

Table 2K – New connections reconciliation

For the 12 months ended 31 March 2019

Line description		Units	DPs	Water	Wastewater	Total
A - Impact of infrastructure charge discounts						
2K.1	Infrastructure charges	£m	3	4.705	4.980	9.685
2K.2	Discounts applied to infrastructure charges	£m	3	0.000	0.017	0.017
2K.3	Gross infrastructure charges	£m	3	4.705	4.997	9.702
B - Comparison of revenue and costs						
2K.4	Variance brought forward	£m	3			0.000
2K.5	Revenue	£m	3	4.705	4.997	9.702
2K.6	Costs	£m	3	-1.614	-1.614	-3.228
2K.7	Variance carried forward	£m	3	3.091	3.383	6.474

Key

Input cell
 Calculation cell
 Copy cell

Please refer to RAG 4.08 - Guideline for the table definitions in the annual performance report for the reporting year 2018-2019

Our new charging arrangements took effect from the start of the current report year which reduced our infrastructure connection charge rates for both water and wastewater. We anticipated an immediate shift to the lower infrastructure connection charge but with some developments already agreed and in contract at the previous higher rate, this has resulted in the income being reported in the above table being a mixture of both the old and new charges.

Our current reporting of all developer activity does not allow for this income to be easily split between those using the old or new charge without having to review all the individual solutions and quotes. But as this is only an issue for the current report year in this transitional period we have not split out this income in the table.

As this is a new table this report year there is no variance brought forward.

Further detail of the costs included in this table can be found in the commentary for Table 2J – Infrastructure Network Reinforcement Costs. As this commentary states this is a new process and work is ongoing to ensure that all off-site costs are being captured and reported to improve both revenue and cost allocations going forward.

As agreed this variance carried forward will be tracked each year until 2023 where upon a review of the

infrastructure connection charges will be undertaken to ensure that the revenue and costs reported are adjusted to be in balance.

Table 2K Line 2. Discounts

Table 2K line 2 reports the total value of the discounts applied to the infrastructure charges for new developments. It is possible to obtain a discount on the water infrastructure charge and the sewerage infrastructure charge. The onus is on the customer to apply for discounts as part of the application process for new water and waste connections. The customer is responsible for providing all the relevant information to determine if the discounts are applicable.

The discount from the waste infrastructure charge is applicable if developments are disposing of surface water to a source other than an existing public sewer and a £125 discount is applied for each connection where there is no surface water drainage. A report on the surface water drainage element of the infrastructure charge is taken from the billing information for new connections and produced the reported figure of £17,250 in Table 2K as the total discounts for the year. No developer has applied for a reduction in the water element of the infrastructure charge.

Infrastructure credits for brownfield development have not been included in table 2K line 2.

iii. Outcome performance summary

Overview of performance commitment information

There are four tables of information within this section:

- Table 3A provides information on our 26 performance commitments.
- Table 3B provides information on the sub-measures that support four of our performance commitments called Stability and Reliability (S&R) measures.
- Table 3C provides information on abstraction incentive mechanisms (AIM).
- Table 3D provides a breakdown of information that supports our customer Service measure, the Service Incentive Mechanism (SIM).

Table 3A – Outcome performance table

For the 12 months ended 31 March 2019

Row	Unique ID	Performance commitment	Unit	Unit description	Decimal places	2017-2018 performance level - actual (for information)
1	PR14YKYWSW_WA1	WA1: Drinking water quality	%	Mean zonal compliance (%)	3	99.953
2	PR14YKYWSW_WA2	WA2: Significant drinking water events which require corrective action	nr	No. of corrective actions required by DWI with respect to potentially significant events notified	0	4
3	PR14YKYWSW_WA3	WA3: Drinking water contacts	nr	No. of contacts (discolouration, taste & odour and illness) in line with DWI reporting	0	8100
4	PR14YKYWSW_WA4	WA4: Water quality stability and reliability factor	category	Asset health indicator	na	Stable
5	PR14YKYWSW_WB1	WB1: Leakage	nr	Megalitres per day (ML/d)	1	300.3
6	PR14YKYWSW_WB2	WB2: Water supply interruptions	time	Minutes lost per property per year	2	6.96
7	PR14YKYWSW_WB3	WB3: Water use	nr	Litres per head per day (l/h/d)	1	135.9
8	PR14YKYWSW_WB4	WB4: Water network stability and reliability factor	category	Asset health indicator	na	Stable
9	PR14YKYWSW_WC1	WC1: Length of river improved (note: PC is part of a total commitment at Appointee level - see also SB4)	nr	Kilometres (km) of river improved (modelled length)	0	-
10	PR14YKYWSW_WC2	WC2: Solutions delivered by working with others (note: PC is part of a total commitment at Appointee level - see also SB3)	nr	No. of solutions delivered by working with others	0	12
11	PR14YKYWSW_WC3	WC3: Amount of land conserved and enhanced (total cumulative area) (note: PC is part of a total commitment at Appointee level - see also SB5)	nr	No. of hectares of land conserved & enhanced (cumulative)	0	11479
12	PR14YKYWSW_WC4	WC4: Recreational visitor satisfaction	text	Assessment of customer satisfaction (qualitative survey)	na	Published
13	PR14YKYWSW_WD1	WD1: Proportion of energy use generated by renewable technology (note: PC is part of a total commitment at Appointee level - see also SC1 and RC1)	%	% of energy use generated by renewable technology	0	11

2018-2019 performance level - actual	2018-2019 PCL met?	2018-2019 outperformance payment or underperformance payment - in-period ODIs (indicator)	2018-2019 outperformance payment or underperformance payment - in-period ODIs (£m, to 4 dp)	2018-2019 outperformance payment or underperformance payment - ODIs payable at the end of AMP6 (indicator)	2018-2019 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 payment (indicator)	31 March 2020 forecast - total AMP6 outperformance payment or underperformance payment (£m, to 4 dp)
99.962	No			Underperformance payment deadband	0.0000	Underperformance payment deadband	0.0000
5	Yes						
7964	No			Underperformance payment	-6.1248	Underperformance payment	-17.2920
Stable	Yes			-	0.0000	-	0.0000
289.8	Yes			Outperformance payment deadband	0.0000	Outperformance payment	0.2525
10.46	Yes			Outperformance payment	4.0177	Outperformance payment	30.2630
133.5	Yes						
Stable	Yes			-	0.0000	-	0.0000
40	-			-	0.0000	Outperformance payment	0.2339
11	Yes			Outperformance payment	0.0095	Outperformance payment	0.1657
11,524	-			-	0.0000	Underperformance payment deadband	0.0000
Published	Yes						
11	No						

Table 3A – Outcome performance table

For the 12 months ended 31 March 2019

Row	Unique ID	Performance commitment	Unit	Unit description	Decimal places	2017-2018 performance level - actual (for information)
14	PR14YKYWSW_WD2	WD2: Proportion of waste diverted from landfill (re-used and recycled) (note: PC is part of a total commitment at Appointee level - see also SC2 and RC2)	%	% of waste diverted from landfill (re-used and recycled)	0	99
15	PR14YKYWSWW_SA1	SA1: Internal sewer flooding incidents	nr	No. of internal sewer flooding incidents	0	1682
16	PR14YKYWSWW_SA2	SA2: External sewer flooding incidents	nr	No. of external sewer flooding incidents	0	9296
17	PR14YKYWSWW_SA3a	SA3a: Pollution incidents - category 1 and 2	nr	No. of pollution incidents (cats 1 and 2)	0	3
18	PR14YKYWSWW_SA3b	SA3b: Pollution incidents - category 3	nr	No. of pollution incidents (cat 3)	0	202
19	PR14YKYWSWW_SA4	SA4: Sewer network stability and reliability factor	category	Asset health indicator	na	Stable
20	PR14YKYWSWW_SB1	SB1: Number of Yorkshire's designated bathing waters that exceed the required quality standard	nr	No. of bathing waters exceeding required standard	0	18
21	PR14YKYWSWW_SB2	SB2: Wastewater quality stability and reliability factor	category	Asset health indicator	na	Stable
22	PR14YKYWSWW_SB3	SB3: Solutions delivered by working with others (note: PC is part of a total commitment at Appointee level - see also WC2)	nr	No. of solutions delivered by working with others	0	12
23	PR14YKYWSWW_SB4	SB4: Length of river improved (against WFD component measures) (note: PC is part of a total commitment at Appointee level - see also WC1)	nr	Kilometres (km) of river improved (modelled length)	0	0
24	PR14YKYWSWW_SB5	SB5: Amount of land conserved and enhanced (total cumulative area) (note: PC is part of a total commitment at Appointee level - see also WC3)	nr	No. of hectares of land conserved & enhanced (cumulative)	0	11479
25	PR14YKYWSWW_SC1	SC1: Proportion of energy use generated by renewable technology (note: PC is part of a total commitment at Appointee level - see also WD1 and RC1)	%	% of energy use generated by renewable technology	0	11.44

2018-2019 performance level - actual	2018-2019 PCL met?	2018-2019 outperformance payment or underperformance payment - in-period ODIs (indicator)	2018-2019 outperformance payment or underperformance payment - in-period ODIs (£m, to 4 dp)	2018-2019 outperformance payment or underperformance payment - ODIs payable at the end of AMP6 (indicator)	2018-2019 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 payment (indicator)	31 March 2020 forecast - total AMP6 outperformance payment or underperformance payment (£m, to 4 dp)
100	Yes						
1692	Yes			Outperformance payment	6.6697	Outperformance payment	25.1837
9116	Yes						
11	No						
188	Yes			Outperformance payment	4.2581	Outperformance payment	21.4756
Stable	Yes			-	0.0000	-	0.0000
17	Yes						
Stable	Yes			-	0.0000	-	0.0000
11	Yes			Outperformance payment	0.0062	Outperformance payment	0.0436
0	-			-	0.0000	Outperformance payment deadband	0.0000
11,524	-			-	0.0000	Underperformance payment deadband	0.0000
11	No						

Table 3A – Outcome performance table

For the 12 months ended 31 March 2019

Row	Unique ID	Performance commitment	Unit	Unit description	Decimal places	2017-2018 performance level - actual (for information)
26	PR14YKYWSWW_SC2	SC2: Proportion of waste diverted from landfill (re-used and recycled) (note: PC is part of a total commitment at Appointee level - see also WD2 and RC2)	%	% of waste diverted from landfill (re-used and recycled)	0	99
27	PR14YKYHHR_RA1	RA1: Service incentive mechanism (SIM)	score	Service incentive mechanism (SIM) score	1	84.3
28	PR14YKYHHR_RA2	RA2: Service commitment failures	nr	No. of GSS (Guaranteed Standards of Service) events	0	12203
29	PR14YKYHHR_RA3	RA3: Overall customer satisfaction (CCWater annual tracking survey)	%	% overall customer satisfaction (CCWater tracking survey)	0	94% (water), 89% (wastewater)
30	PR14YKYHHR_RB1	RB1: Cost of bad debt to customers (expressed as proportion of bill)	%	Cost of bad debt as % of average annual bill	2	3.10
31	PR14YKYHHR_RB2	RB2: Number of people who we help to pay their bill	nr	No. of customers who are assisted to pay their bill	0	28853
32	PR14YKYHHR_RB3	RB3: Value for money (CCWater annual tracking survey)	%	% customer satisfaction (CCWater tracking survey)	0	76% (water), 79% (wastewater)
33	PR14YKYHHR_RC1	RC1: Proportion of energy use generated by renewable technology (note: PC is part of a total commitment at Appointee level - see also WD1 and SC1)	%	% of energy use generated by renewable technology	0	11
34	PR14YKYHHR_RC2	RC2: Proportion of waste diverted from landfill (re-used and recycled) (note: PC is part of a total commitment at Appointee level - see also WD2 and SC2)	%	% of waste diverted from landfill (re-used and recycled)	0	99

Key

 Input cell  Calculation cell

Please refer to RAG 4.08 - Guideline for the table definitions in the annual performance report for the reporting year 2018-2019

2018-2019 performance level - actual	2018-2019 PCL met?	2018-2019 outperformance payment or underperformance payment - in-period ODIs (indicator)	2018-2019 outperformance payment or underperformance payment - in-period ODIs (£m, to 4 dp)	2018-2019 outperformance payment or underperformance payment - ODIs payable at the end of AMP6 (indicator)	2018-2019 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 payment (indicator)	31 March 2020 forecast - total AMP6 outperformance payment or underperformance payment (£m, to 4 dp)
100	Yes						
84.0	No						
14221	Yes						
95% (water), 88% (wastewater)	Yes						
3.02	Yes						
31606	Yes						
77% (Water), 79% (wastewater)	Yes						
11	No						
100	Yes						

Please see Section 4 of this APR (Review of our performance) for an explanation of our performance against our performance commitments. We have moved all of our commentary around our performance to Section 4 following feedback from our customers. In last year's APR, the commentary on our performance commitments was included both here and within Section 3. Moving all our commentary to one place allows our customers and stakeholders to see all the information on performance commitments in one place.

Table 3B – Sub-measure performance table

For the 12 months ended 31 March 2019

Row	Unique ID	PC/sub-measure ID	PC/sub-measure
1	PR14YKYWSW_WA4	00	WA4: Water quality stability and reliability factor
2	PR14YKYWSW_WA4	01	WTW coliform non-compliance
3	PR14YKYWSW_WA4	02	SR coliform non-compliance
4	PR14YKYWSW_WA4	03	Turbidity
5	PR14YKYWSW_WA4	04	Enforcements
6	PR14YKYWSW_WA4	05	Reactive equipment failures
7	PR14YKYWSW_WB4	00	WB4: Water network stability and reliability factor
8	PR14YKYWSW_WB4	01	Total bursts
9	PR14YKYWSW_WB4	02	Interruptions >12 hours
10	PR14YKYWSW_WB4	03	DG2 low pressure
11	PR14YKYWSW_WB4	04	Customer contacts for discolouration (nr per 1,000 population)
12	PR14YKYWSW_WB4	05	Distribution index TIM (100 - mean zonal compliance)
13	PR14YKYWSW_WB4	06	Reactive equipment failures
14	PR14YKYWSWW_SA4	00	SA4: Sewer network stability and reliability factor
15	PR14YKYWSWW_SA4	01	Sewer collapses
16	PR14YKYWSWW_SA4	02	Pollution incidents (CSO, RM, FS and SPS)
17	PR14YKYWSWW_SA4	03	Properties flooded due to other causes
18	PR14YKYWSWW_SA4	04	Properties flooded due to overloaded sewers, excluding severe weather
19	PR14YKYWSWW_SA4	05	Sewer blockages
20	PR14YKYWSWW_SA4	06	Reactive equipment failures
21	PR14YKYWSWW_SB2	00	SB2: Wastewater quality stability and reliability factor
22	PR14YKYWSWW_SB2	01	Sewage treatment works non-compliance
23	PR14YKYWSWW_SB2	02	Population equivalent non-compliance
24	PR14YKYWSWW_SB2	03	Reactive equipment failures

Key

 Input cell  Calculation cell

Please refer to RAG 4.08 - Guideline for the table definitions in the annual performance report for the reporting year 2018-2019

Unit	Decimal places	2017-2018 performance level - actual	2018-2019 performance level - actual	2018-2019 PCL met?
category	na	Stable	Stable	Yes
%	3	0.014	0.021	Yes
%	2	0	0	Yes
nr	0	0	0	Yes
nr	0	1	0	Yes
nr	0	3744	3768	Yes
category	na	Stable	Stable	Yes
nr	0	6858	8254	No
nr	0	320	414	No
nr	0	11	9	Yes
nr	3	0.674	0.699	Yes
%	3	0.08	0.127	Yes
nr	0	942	911	Yes
category	na	Stable	Stable	Yes
nr	0	218	255	Yes
nr	0	172	172	Yes
nr	0	387	393	No
nr	0	12	8	Yes
nr	0	14917	16860	Yes
nr	0	3400	3537	Yes
category	na	Stable	Stable	Yes
nr	0	5	6	No
%	1	0.0	0	Yes
nr	0	10884	10035	Yes

As part of our commitment to make sure we meet our customer promises we have four performance commitment measures called Stability and Reliability (S&R) factors. The four measures are:

- Water quality S&R factor - monitors how well our water treatment works are performing.
- Water network S&R factor - monitors how well our clean water network is performing.
- Sewer network S&R factor - monitors how well our waste water network is performing.
- Waste water quality S&R factor - monitors how well our waste water treatment works are performing.

These measures reflect our duty to provide water and waste water services and protect public health over the long and short term.

These measures are made up of a number of sub-measures. We report our overall S&R performance in table 3A. Table 3B provides the detail of all the sub measures.

Overall S&R performance is assessed by reviewing performance of all the sub measures. This evaluation is undertaken on an annual and a five-yearly basis to categorise each S&R factor under one of three headings 'improving', 'stable' or 'deteriorating'. A deteriorating assessment means that Yorkshire Water could be penalised. More information on how this assessment is made and a subsequent penalty calculated (if applicable) is available in our Stability and Reliability Factor guide on our website www.yorkshirewater.com/ourperformance

Overall, we are reporting 'stable' performance for 2018/2019 across all four of our S&R measures.

Water Quality Stability & Reliability factor

Table 3B Line 1. Water quality stability and reliability factor

This is the overall performance commitment. This measure is an overall assessment of long term stability and reliability for water quality, based on the following basket of indicators:

- Water treatment works coliforms non-compliance (%)
- Service reservoir coliforms non-compliance (%)
- Turbidity (number)
- Enforcement (incidents number)
- Reactive equipment failures (No)

Overall, we are reporting 'stable' performance for 2018/2019.

Table 3B Line 2. Water treatment works coliform non-compliance

This indicator measures the number of water treatment works with determinations containing coliforms as a percentage of the number of determinations of water leaving treatment works taken at frequencies required by regulation 13 (Schedule 3, table 3, item 2), as specified in regulation 4 (schedule 1, table A, part II, item 1) of the 'Water Supply (Water Quality) Regulations 2000' (and its equivalent in Wales). This information is given in the Chief Inspector of the Drinking Water Inspectorate's Annual Report in the calendar year.

There has been a slight increase from 0.014 in 2017 to 0.021 in 2018. This is due to an increase in the number of water treatment works (WTWs) with coliform exceedances; three WTWs with single coliform exceedances in 2018 compared with two works with total coliform exceedances in 2017.

The three WTWs with coliform exceedances in 2018 were:

- Langsett WTW had a single coliform detection on 04/01/2018.
- Loxley WTW has also had a single coliform detection on 03/04/2018.
- Harlow Hill was the third works fail, again with a single coliform detection on 06/09/2018.

The two sites which failed in 2017 were Acomb Landing and Eccup WTWs.

The performance identified for the reporting year is a slight deterioration from that recorded in 2017 and 2016. Root cause analysis investigations are carried out into all failures. Investigations demonstrate that upstream treatment processes were well operated at the time of sample collection and contact with chlorine-based compounds was above the disinfection target. A robust programme of contact tank, clear water tank, and treated water tank inspections are included in the enhanced inspection regime. This programme has been further extended to place more emphasis on associated backwash tanks and process tanks at WTWs.

Table 3B Line 3. Service reservoir coliform non-compliance

This indicator measures the number of service reservoirs with >5% of sample determinations containing coliforms expressed as a percentage of total number of service reservoirs.

Performance has continued to remain a 0% non-compliance. This has been the case since 2013.

There were four coliform detections at service reservoirs in 2018 compared to 18 in 2017. The highest percentage fail rate at any service reservoir was 1.92% for two sites, well below the 5% threshold.

Each instance of failure is investigated thoroughly.

Site name	Grand Total	% Failure
Brayton Selby CRE	52	1.92
Moonshine SRE	53	1.89
Siwards How WTR	52	1.92
Staincross SRE	53	1.89

Table 3B Line 4. Water treatment works turbidity

This indicator measures the number of operational potable water treatment works and sources whose turbidity 95 percentile is less than a 0.5 NTU threshold. Calculate percentile value using all data from regular routine sampling of final water at water treatment works for the calendar year. Minimum of 30 water samples where the works is in production for more than 11 months of the year. Otherwise, a minimum of 30 samples, less one sample per unit of four weeks that the works is not in supply. The maximum time interval between data samples is 28 days where works is in production for more than 11 months of the year, otherwise 28 days less one per unit of four weeks not in supply.

In 2018 there were no works exceeding this threshold.

The highest turbidity 95 percentile value was for Irton WTW (0.37 MI/d). The same works was the highest recorded 95 percentile in 2017 also. This site was subject to a single regulatory failure against the standard for turbidity on 29/12/2017 (4.85 NTU). The site has been undergoing AMP6 quality investment for raw water Cryptosporidium and pesticides. However, the failure in 2017 was subsequently shown to be due to the presence of copper particles –considered to be due to damage to the sample line in extremely cold weather conditions. There was no evidence of filtration breakthrough over this period.

There were no regulatory fails in 2018, compared to 4 in 2017.

Table 3B Line 5. Enforcement actions considered for microbiological standards

This indicator measures the number of enforcement actions as initiated by the Drinking Water Inspectorate (DWI). There have been zero enforcement actions this reporting period.

Table 3B Line 6. Reactive equipment failures

This indicator measures the number of works orders created reactively for water quality assets. Work raised as part of planned servicing are not included unless the asset has failed. There were 3,768 works orders created over the last year, which is below the lower tramline.

Water Networks Stability & Reliability factor

Table 3B Line 7. Water networks stability and reliability factor

This is the overall performance commitment. This measure is an overall assessment of long term stability and reliability for the water network, based on the following basket of indicators:

- Total bursts (number)
- Interruptions greater than 12 hours (number)
- Low Pressure (number)
- Customer contacts for discolouration (number per 1,000 population)
- Distribution index TIM (as 100 minus Mean Zonal Compliance) (%)
- Reactive equipment failures
- Security of supply index

Overall, we are reporting 'stable' performance for 2018/2019.

Table 3B Line 8. Total bursts

Total bursts refers to the number of mains bursts within the reporting year. Mains bursts include all physical repair work to mains from which water is lost, which is attributable to pipes, joints or joint material failures or movement, or caused or deemed to be caused by conditions or original pipe laying or subsequent changes in ground conditions.

Mains bursts have increased this year to 8,254. This is above the reference level of 6,000 and also above the high tramline level of 7,710. There are two main reasons for the increase in bursts over the last year: the extended hot dry summer and our deployment of proactive resources to assist with our ambitious leakage target.

2018/2019 experienced higher temperatures compared to previous summers over the last 5 years. This hot summer resulted in a significantly reduced soil moisture deficit, which led to ground movement and therefore increased burst rate.

In order to meet our ambitious leakage targets, we deployed additional proactive resources. The number of leakage technicians, whose job is to find leaks, was increased from 140 to 272 over the year, with a peak of 370 resources at one point. This inevitably resulted in more mains repairs being carried out. The number of proactively found leaks has increased in quarter three and quarter four, which correlates to the increase in our leakage technician resource.

Table 3B Line 9. Unplanned interruptions greater than 12 hours

This indicator measures the number of properties affected by unplanned supply interruptions, of more than twelve hours' duration. The unplanned greater than (>) 12-hour interruptions measure within the water networks stability and reliability performance commitment is derived from the water supply interruptions performance data (Table 3A line 6). The reference level (target) for this measure is 220 properties per year. Our performance this year was 414 properties from 43 separate incidents.

Performance against the target has been challenging due to the unusual weather patterns experienced in the year, causing increased levels of network failure. In the summer, an extended hot and dry period resulted in an increase in volume of network failure. We believe that these failures were caused by several factors, including increased demand, a significantly reduced soil moisture deficit and increased activity on the network by Yorkshire Water and our service partners. A lead measure for unplanned interruptions >12 hours is the volume of emergency jobs we receive which are due to a customer reporting no water, a catastrophic burst or an asset alarm received in our control room. During the summer months (July, August and September) these increased by 73% based on the same period in 2017/2018. In July we received more than double the number of the previous year.

We mitigated a further deterioration in performance by implementing several initiatives as part of our ongoing Customer Minutes Lost programme this year. These initiatives were based on an improved operational response, delivered by the control room engineers managing network failures, and the restoration team, mitigating the impact of events by responding quickly to restore customers supplies. These were implemented towards the end of the year.

Table 3B Line 10. DG2 low pressure

This indicator measures the total number of properties which have received and are likely to continue to receive pressure below the reference level when demand is not normal. The reference level of service is a flow of 9 l/min at a pressure of 10m head on the customers side of the main stop tap.

The number of properties on the register has decreased. There are 9 properties on the register. This is against a target of 15. None of the properties currently on the register are on joint supplies.

There have been properties added to the register and properties removed. Solutions have been delivered via both capital investment and operational improvements. There have been 6 properties which have remained static on the register for the reporting period.

Table 3B Line 11. Consumer contacts discoloration

This indicator measures the number of customer contacts regarding discoloration divided by 1,000 population. This is a calendar year measure.

There has been a slight deterioration in performance from 0.699 contacts per 1,000 population in 2018 compared with 0.670 contacts per 1,000 population in 2017.

This data excludes 550 contacts related to notified events. This is consistent with Drinking Water Inspectorate (DWI) reported numbers and DWI advice stating that exclusion of contacts received during notified events is required.

The slight increase in contact rate is primarily related to challenging demand conditions related to unusual weather. 2018 included high demand periods from both the "Beast from the East" in March and the exceptionally dry and hot summer.

Table 3B Line 12. Distribution maintenance index

This indicator measures the arithmetic mean of the zonal compliance values for Yorkshire Water zones and supply pipes for turbidity, iron and manganese only (as 100-mean zonal compliance).

There is a slight deterioration for the Distribution Index (TIM) measure from 0.080 in 2017 to 0.127 in 2018.

There was an increase in the overall number of regulatory failures for turbidity, iron, and manganese. In total, there were 16 regulatory fails for affected parameters in 2018 and only 9 in 2017. There were 15 iron failures in 2018 (compared with 8 in 2017), 0 turbidity failures in 2018 (0 in 2017) and 1 manganese fail in 2018 (1 in 2017).

All failures identified were investigated. Whilst some failures were related to burst mains in the majority of cases the cause was found to be low turnover in 'dead-end' locations. The high demand conditions are likely to have resuspended, and subsequently deposited, an increased mass of sediments leading to the greater detection of exceedances.

The location of the failed samples appears to indicate a larger than expected number supplied from Grid Trunk mains. This Grid trunk mains systems was utilised extensively to ensure all customers were maintained on supply throughout 2018.

An enhanced programme of flushing of the network including recruitment of a dedicated team to target and deliver the flushing has been restarted with a phased increase in resource. This team focussed on the implementation of systematic DMA flushing and during the year improved the completion of targeted dead-end main flushing.

It is expected that as the targeted flushing programme will be optimised in response to new information on sediment return rate then further reduction in failures will occur. Trunk main condition work will continue to prevent build-up of sediments which can later be re- suspended.

Table 3B Line 13. Reactive equipment failures

This indicator measures the number of works orders created reactively for water network assets. There were 911 works orders created over the last year, which is below the lower tramline.

Sewer Network Stability & Reliability factor

Table 3B Line 14. Sewer network stability and reliability factor

This is the overall performance commitment. This measure is an overall assessment of long term stability and reliability for the waste water network, based on the following basket of indicators:

- Sewer collapses
- Pollution incidents (CSO, RM, FS & SPS)
- Properties flooded due to other causes
- Properties flooded due to overloaded sewers, excluding severe weather
- Sewer blockages
- Reactive equipment failures.

The measure excludes assets transferred to Yorkshire Water in October 2011, because there is not enough data on this asset base to allow meaningful analysis.

Overall, we are reporting 'stable' performance for 2018/2019.

Three of the sub-measures are below the lower limit and below reference. Four of the sub-measures are showing a stable or reducing trend through the AMP. One of the sub-measures is significantly above reference level and also above the upper limit tramline. This measure is properties flooded due to other causes. This is the second year that this sub-measure has exceeded the upper limit tramline.

Table 3B Line 15. Sewer collapses

This indicator measures the number of repairs to gravity sewer collapses.

The total number of sewer collapses on the legacy network assets has increased 14% from 218 in 2017/2018 to 355 in 2018/2019. This performance is in line with average performance of 242 for the 4 years of this AMP. This performance is at the reference level of 255.

The split between Rising Mains (RM) and Gravity Collapses has returned to levels seen in previous years after lower level seen in 2018/2019 – we only saw an additional 7 collapse as result of activities carried over from 2017/2018 so this was not as significant as expected previously.

	2015/2016	2016/2017	2017/2018	2018/2019
Rising Main burst	89	59	94	88
Gravity collapse	172	184	124	167
Total Gravity Collapse & RM	261	243	218	255
Percentage RM to total RM & Gravity collapse	34.00	24.28	43.12	29.02

In year 5 we will be continuing the approach to proactive work which has increased identification of defects. The driver for this activity is the reduction of internal sewer flooding incidents, however the activities being undertaken will deliver longer term benefits in resolving defects prior to a collapse.

Table 3B Line 16. Pollution incidents

This indicator measures the number of category 1-3 unconsented and consented pollution incidents on Combined Sewage Overflow, Foul/Combined Sewer, Foul Manhole, foul rising mains, sewage pipe bridges, syphons and sewage pumping stations. Pollution is reported as a calendar year measure January to December. The Final Determination requires a stable level of performance, the reference level being 203 incidents and the upper limit being 251.

The measure in 2018/2019 has remained static at 172, this is the same as the reported figure for 2017/2018. This is below the reference level of 203.

The pro-active pollution prevention initiatives continue on the sewer network assets and benefit overall pollution performance. There is a mixture of Capex and Opex projects aimed at reducing pollution numbers.

In the last year, we completed 5,200 proactive cyclical jetting visits to manholes located within 10m of a watercourse. Where permitted these are CCTV'd and jetted 50m upstream and 50m downstream.

We undertook CCTV on 181,000m and fixed 521 defects. We targeted this activity in areas located with 25m of a watercourse. This activity equates to 45 incidents saved.

In 2018/2019, 33 schemes have been delivered to support pollution reduction. These are split across repair, replace, infra and non-infra investment categories.

Year 5 focus for improvement has three themes: Predictive Capability, Proactive Interventions and Repeat Avoidance. More information on these can be seen in Section 4.

Table 3B Line 17. Properties flooded due to other causes

This indicator measures the number of properties affected by flooding incidents from equipment failures, blockages or collapses (collectively grouped as other causes). This includes properties where an uninhabited cellar is the only part affected by the flooding. All properties flooded due to other causes are included where the flooding incident was caused by factors beyond the our control. A property affected by more than one incident under this definition is reported as one property.

This is the sub-measure within the basket that is significantly above reference level and also above the upper limit tramline.

Performance in 2018/2019 has increase by 1.6% from 387 to 393. This measure has been showing an increase in performance in all year of this AMP. However, the rate of increase in this reducing.

	AMP4				AMP5					AMP6			
	2006/2007	2007/2008	2008/2009	2009/2010	2010/2011	2011/2012	2012/2013	2013/2014	2014/2015	2015/2016	2016/2017	2017/2018	2018/2019
Other Causes	257	374	443	355	340	363	420	319	292	346	372	387	393
% Increase from previous year		45.5%	18.4%	-19.9%	-4.2%	6.8%	15.7%	-24.0%	-8.5%	18.5%	7.5%	4.0%	1.6%

2018/2019 has seen shift in our management approach to look at the “end to end” approach to network escapes. This has required the review of our customer facing approach as well as our investment strategy.

Activity to improve our performance in this area involved the insourcing of proactive jetting activities, which are currently delivered by service partner resources and at times of escalation these resources are diverted onto reactive activities. Under the new operating model there is an increase in first line response resources, this will keep to a minimum the occurrences of proactive resources being diverted to reactive activity.

A review of proactive work activity in AMP6 was undertaken by PA Consulting. This identified that the approach was ineffective at delivering required benefits from the activity. Outcome of review was to transfer this activity to Asset Planning. This ensures an analytical approach to identifying hotspots to deliver effective targeting of proactive resources. Data Science reviewed forecasts and confirmed the benefits identified in the approach. This form of benefits review has not been undertaken to this level of granularity previously.

Table 3B Line 18. Properties flooded due to overloaded sewers, excluding severe weather

This indicator measures the number of properties affected by flooding incidents due to overloaded sewers in rainfall events occurring more frequently than or equal to 1 in 20 years. The reported number excludes flooding in rainfall events less frequent than 1 in 20 and flooding incidents via the sewers caused by high river levels, inundation due to surface run-off or overflowing watercourses.

Throughout this AMP we have seen a reduction in the number of properties flooded due to overloaded sewers, excluding severe weather incidents. In 2015/2016 we recorded 50 incidents. This reduced to 33 in 2016/2017, 12 in 2017/2018 and then 8 in 2018/2019. Our performance is well below the reference level of 72.

The low level of incidents seen in 2018/2019 has been influenced by the weather pattern, only 4 instances of overloaded flooding were excluded from this measure due to severe weather.

Table 3B Line 19. Sewer blockages

This indicator measures the number of sewer blockages cleared.

This measure has increased in 2018/2019 to 16,860 from 14,917 in 2017/2018. This is a change of 13%. Performance remains below the reference level of 20,695. Performance is below average for the performance seen during this AMP which stands at 17,149.

Table 3B Line 20. Reactive equipment failures

This indicator measures the number of works orders created reactively for waste water network assets. There were 3,537 works orders created over the last year, which is below the lower tramline.

Wastewater Quality Stability & Reliability factor

Table 3B Line 21. Wastewater quality stability and reliability factor

This is the overall performance commitment. This measure is an overall assessment of long term stability and reliability for waste water quality, based on the following basket of indicators:

- Sewage treatment works non-compliance
- Population equivalent % non-compliance
- Reactive equipment failures

Overall, we are reporting 'stable' performance for 2018/2019.

Table 3B Line 22. Sewage treatment works non-compliance

This indicator measures the number of discharges failing upper tier, non-sanitary and look up table (LUT) consents. The data is derived from the Environment Agency Performance Tracker and in turn verified using our own weekly compliance report to ensure both records match.

There are currently 6 failing works. One of the failing works (Knostrop Sewage Treatment Works (STWs)) is still awaiting the outcome of the Environment Agency's assessment on whether the failing works will be attributed to third party. In the event of a successful third-party challenge at Knostrop STW, the actual number of non-compliant works for 2018 may decrease to 5, which would match 2017 performance.

Of the failing works, three of the six were deemed to be caused by third party trade impact from both consented and unconsented traders. Trade investigations were carried out in these areas including an assessment to ensure consented traders were operating in line with consent parameters. Appropriate enforcement action was taken in line with the Company's Enforcement Policy. In addition, an internal audit has been instigated with the aim of ensuring Yorkshire Water is policing traders in line with internal procedures.

An extensive training programme for operational staff occurred throughout 2018.

Yorkshire Water continues to analyse and escalate accordingly, to ensure the risk in this area is minimised. Weekly compliance meetings occur to monitor the regional compliance situation and ensure appropriate actions are being undertaken.

To reduce the risk of non-compliant works occurring, site specific action groups meet to discuss the action plans that are needed to reduce further risk. Any that do occur, are subject to a full root cause assessment being conducted to ensure lessons learned can be shared and applied at other sites. Trade investigations have been extensive on the sites that have become non-compliant works. The working arrangements of our staff has been flexed to ensure that a greater presence of colleagues have supervised the Traders at these problematic sites.

If a site requires capital intervention to resolve an issue these issues are highlighted through regular Proactive Ops & Asset Management (PROAM) meetings and risk scored accordingly. Any high-risk issues will have a business case built and funding obtained to resolve the issue. If necessary, the issue may be taken down an emergency funding route if the issue requires urgent resolution.

Table 3B Line 23. Population equivalent non-compliance

This indicator measures the population equivalent of the discharges failing look up table (LUT) consents.

Performance in this area has been the same as in the 2017/2018 and is reported as 0.0%. Performance is at reference level for this measure.

In recent years, look up table failures have been relatively few and far between. This is because the nature of look up table non-compliances means that investigation and intervention can be carried out at an early stage (i.e. when a site picks up one or two sample exceedances).

Two of our sites at Goathland and Hatfield Woodhouse failed the look up table in 2018 but the low population of these works means that the level of performance in this area remained the same as reported previously.

Hatfield Woodhouse became a look up table non-compliance failure due to three individual sample exceedances (BOD) the causes of which were uncorrelated. Intervention was difficult due to the unforeseen nature of the issues.

The second and third exceedance at Goathland were correlated and due to faults on the sand filter. As the issue required resolution by a specialist third party contractor there was a delay in getting the issue resolved, which lead to the 2 exceedances occurring within a relatively short timescale.

Any site that is close to becoming a look up table non-compliant works classification is subject to discussion in both a weekly compliance meeting and, if deemed appropriate, a weekly management review meeting. There is a lower tolerance threshold for the site producing poor quality data that could indicate a sample fail may occur. Any actions that may alleviate the situation are discussed and people are held to account on completing actions within a designated timescale.

To reduce any further risk to population equivalent non-compliance more stringent mitigation plans have been put in place (e.g. using the tanker fleet to ensure no final effluent leaves site) on works where the investigation is ongoing or when recovery / mitigation may take a period to fully implement.

If a site requires capital intervention to resolve an issue, these issues are highlighted through regular PROAM and Delivery Assurance Group (DAG) meetings and risk scored accordingly. Any high-risk issues will have a business case built and funding obtained to resolve the issue. If necessary, the issue may be taken down an emergency funding route if the issue requires urgent resolution.



Table 3B Line 24. Reactive equipment failures

This indicator measures the number of works orders created reactively for waste water quality assets. There were 10,035 works orders created over the last year, which is below the lower tramline.

Table 3C – AIM (Abstraction Incentive Mechanism) table

For the 12 months ended 31 March 2019

Row	Abstraction site	Decimal places	2018-2019 AIM performance [MI]	2018-2019 normalised AIM performance [nr]	Cumulative AIM performance 2016-2017 onwards [MI]	Cumulative normalised AIM performance 2016-2017 onwards [nr]	Contextual information relating to AIM performance
1	ZERO SITES IN YWS	0	0.0	0.00	0.0	0.00	NOT APPLICABLE
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							
Total			0.0	0.00	0.0	0.00	

Key
 Input cell
 Calculation cell

Please refer to RAG 4.08 - Guideline for the table definitions in the annual performance report for the reporting year 2018-2019

Water supplies are provided by taking, or abstracting, water from one of three types of water sources; groundwater, rivers and upland reservoirs. All three are used together to provide our region's water supply. However, water abstraction can cause damage to the water environment and ecology and so the Environment Agency (EA) provides protection through abstraction licensing. Abstraction licences detail how much water can be abstracted to ensure there is sufficient downstream flow in rivers and streams.

Table 3C provides information on abstraction mechanisms. The Abstraction Incentive Mechanism (AIM) was introduced by Ofwat to encourage water companies to reduce the environmental impact of abstraction at sensitive sites during periods of low water flows.

In October 2013 we were provided with a list of abstraction sites identified as being potentially appropriate for AIM. Subsequent investigations and application of the Ofwat AIM guidelines by Yorkshire Water and the EA showed that none of these sites were suitable for AIM and should not be reported as part of table 3C.

For our PR19 submission we reviewed the 2020-2025 Water Industry National Environment Programme (WINEP) and have considered other river abstractions that are not included in WINEP, to identify further abstraction sites that may be suitable for AIM.

28 sites were identified initially, 15 currently included in WINEP and 13 sites not included in WINEP.

Suitability of these 28 sites for AIM was considered through application of the Ofwat 2016 guidelines. Through this filtering process no further sites have been identified for the AIM. Sites were filtered out for a range of reasons but primarily due to:

- environmental issues already being dealt with via another route, for example abstraction licence, hands-off flow or baseline flow changes;
- environmental investigation underway or pending; or
- environmental investigation completed, and no evidence of damage found.

Of the 15 sites currently in WINEP, 8 will be addressed through AMP7 changes to baseline flows, 6 have no evidence of flow related environmental impact or have investigation pending and one has no suitable gauging.

Of the 13 sites not included in WINEP, 11 showed no evidence of a flow related problem and two were already being addressed by other means, such as baseline flow alterations.

Based on the work completed, we are not proposing to include any AIM sites at PR19, although we will consider sites in the future as PR19 sustainable catchments investigations are completed. We will also work with local environmental stakeholders to identify potential sites which may benefit from reduced abstraction at low flows. If any sites are identified, we will apply the appropriate screening processes to determine if they are suitable for future inclusion in the AIM.

The EA agree that there are currently no sites appropriate for AIM in the Yorkshire region. We have also discussed and gained support for our approach to AIM with the Environmental Sub Group of our Yorkshire Forum for Water Customers.

Source Data for Proposed Site	Summary of Sites Available
Environment Agency/ Ofwat October 2013 list	No sites available from this list after they were given detailed consideration during AMP6. Two sites subject to the Environment Agency investigations and subsequently dropped. No new sites proposed.
Other sites (WINEP and Environmental Damage Regulations)	<p>28 sites identified initially. Filtering applied in accordance with Ofwat guidelines.</p> <p>Of 15 sites currently in WINEP:</p> <ul style="list-style-type: none"> • 8 will be addressed through AMP7 changes to baseline flows • 6 have no evidence of flow related environmental impact or have investigation pending • 1 has no suitable gauging <p>Of 13 sites no longer on WINEP, not included in WINEP, or where Environmental Damage Regulations apply:</p> <ul style="list-style-type: none"> • 11 with no evidence of flow related problem (after investigation) • 2 are being addressed by other means, including one (1) Environmental Damage site
Local concerns	None identified at present. To be kept under review.

Abstraction site name	Abstraction type	Impacted waterbody	Site review summary	Aim
Finningley	Groundwater	Riveridle	Reducing abstractions would not benefit the drainage of the River Idle Washlands SSSI. Doncaster Sherwood Sandstones Aquifer impacted by abstraction but slow to respond to changes in abstraction rates therefore not suited for AIM	Removed from AIM under Ofwat Filter 3.10
Armthorpe				
Nutwell				
Hatfield				
Thornham				
Highfield Lane				
Austerfield				
Hatfield Woodhouse				
Kepwick Springs	Groundwater	Broad Beck from source to Cog Beck	Treatment works closed - no spring abstraction	Removed from AIM
Newsham and Crumma Springs	Groundwater	Brough and Scorton Beck	Very small WFD deficit - 0.003Ml/d (0.03% of the surface water body Q95 flow). Changes to abstraction would be within the accuracy of the flow gauge. Water body potentially affected by nearby industrial borehole.	Removed from AIM under Ofwat Filter 3.3
East Ness boreholes	Groundwater	Rye from River Seph to Holbeck	Signed off by EA as WFD compliant	Removed from AIM
Keld Head boreholes	Groundwater	Costa Beck from Source to Pickering Beck	Signed off by EA as WFD compliant	Removed from AIM
Hazel Head springs	Groundwater	Wheeldale Gill and Murk Esk	EA hydrological assessment showed abstraction has no significant impact on stream flow or pH	Removed from AIM under Ofwat Filter 3.3
Carlesmoor Beck	Surface water	Laver and Kex Beck	Abstractions 16km from nearest gauging station at bottom of River Laver. Cannot use this station to manage abstractions due to distance from gauging station and influence of Lumley Moor reservoir and additional tributary Kex Beck. EA preferred solution to any confirmed ecological failure would be an increased compensation flow on site.	Removed from AIM under Ofwat Filter 3.6
Stock Beck	Surface water			
River Laver intakes	Surface water			

Table 3D – SIM (Service Incentive Mechanism) table

For the 12 months ended 31 March 2019

Line description		Units	DPs	Score
A - Qualitative performance				
3D.1	1st survey score	nr	2	4.32
3D.2	2nd survey score	nr	2	4.33
3D.3	3rd survey score	nr	2	4.35
3D.4	4th survey score	nr	2	4.51
3D.5	Qualitative SIM score (out of 75)	nr	2	63.33
3D.6	Total contact score	nr	2	86.59
3D.7	Quantitative SIM score (out of 25)	nr	2	20.67
3D.8	Total annual SIM score (out of 100)	nr	2	84.00

Key

 Input cell  Calculation cell

Please refer to RAG 4.08 - Guideline for the table definitions in the annual performance report for the reporting year 2018-2019

Table 3D provides further information on our customer service measure, the Service Incentive Mechanism (SIM). SIM is a performance commitment that was introduced by Ofwat in 2010. The overall SIM performance is included in Table 3A and an explanation of SIM can be found in Section 4 of this Annual Performance Report. This table provides a further breakdown of the SIM performance.

The overall SIM Score is based on qualitative (75%) and quantitative (25%) elements. The qualitative score is produced from surveys carried out with customers (800 a year) who have had contact with us within a defined period. The survey asks several questions with the key one that the results is based on an overall satisfaction question, scored 1 to 5 (5 being very satisfied). The quantitative elements look at the number of written complaints received and at what stage of the complaints procedure they were as well as “unwanted” contacts (when customers have to call us). These elements are combined to give an overall SIM score out of 100.

In 2018/2019 we have seen a slight decrease in our overall score. Our overall SIM score means we have not achieved our performance commitment which is to improve year on year.

Our Customer Promise is to get things right first time, be easy to deal with and be helpful and friendly. Whilst we have not met our performance commitment we have demonstrated that we are achieving our Customer Promise through our continued reductions in the volume of written complaints received, particularly repeat complaints as well as a continued reduction in “unwanted” contacts. Our quantitative SIM score has improved from 20.14 to 20.67.

We know that our slight decrease in SIM performance can be attributed to the annual customer experience satisfaction survey score, which at 4.38 is slightly lower than the score of 4.42 achieved for 2017/2018. We have looked into the reasons for this and we know that the survey was influenced by higher than usual numbers of mains bursts caused by long spells of dry weather during summer 2018, which affected resolution times and keeping customers informed. From the table, you can see we had lower survey scores in the first three quarters of this year compared with the final survey score.

iv. Additional regulatory information

The information in this section details further regulatory financial and non-financial information as required by Ofwat, with a brief description of significant variances compared to previous years. The information in this section comprises the following tables.

- Table 4A: Non-financial information. Number of properties and volumes
- Table 4B: Wholesale totex analysis
- Table 4C: Impact of AMP performance to date on Regulatory Capital Value (RCV)
- Table 4D: Totex analysis for wholesale water by upstream category
- Table 4E: Totex analysis for wholesale waste water by upstream category
- Table 4F: Operating costs associated with running the household retail business
- Table 4G: Wholesale current cost financial performance
- Table 4H: Financial metrics
- Table 4I: Financial derivatives

Table 4A: Non-financial information – number of properties and volumes

For the 12 months ended 31 March 2019

Line description		Units	DPs	Current year	
				Unmeasured	Measured
Retail					
A - Household					
4A.1	Number of void households	000s	3	61.602	50.682
4A.2	Per capita consumption (excluding supply pipe leakage) l/h/d	l/h/d	2	154.83	111.50
				Water	Wastewater
Wholesale					
B - Volume (Ml/d)					
4A.3	Bulk supply export	Ml/d	3	0.304	0.000
4A.4	Bulk supply import	Ml/d	3	49.175	0.000
4A.5	Distribution input	Ml/d	3	1,282.950	

Key

 Input cell  Calculation cell

Please refer to RAG 4.08 - Guideline for the table definitions in the annual performance report for the reporting year 2018-2019

This table provides information regarding water consumption, vacant households (voids) and wholesale water and waste water volumes.

Table 4A Line 1. Number of void Households

Unmeasured household void properties have increased from 61,334 customers in 2017/2018 to 61,602 customers in 2018/2019, an increase of 268 customers.

Measured household void properties have increased from 45,410 customers in 2017/2018 to 50,682 customers in 2018/2019, an increase of 5,272 customers.

Table 4A Line 2. Per capita consumption (excluding supply pipe leakage) l/h/d

Unmeasured household per capita consumption (PCC) has decreased slightly in 2018/2019 (0.55%). We saw a significant increase in demand from unmeasured household customers during the extended period of dry,

warm weather in June and July 2018. Demand in June and July 2018 was 8% greater than in the equivalent period in 2017. However unmeasured household demand was lower in the preceding months of April and May 2018 when compared to the previous year.

From August 2018 unmeasured household demand dropped significantly - to below demand in the same period for the previous 6 years by 3% on average. Overall, estimated unmeasured household PCC was 0.5% lower in 2018/2019 than in the previous report year.

We observed a similar pattern in measured household demand, with increased consumption in June and July 2018 and a corresponding decrease in billed measured consumption from August 2018. However overall measured household PCC is greater in 2018/2019 than last year, with reported PCC increased by 3.5 l/h/d (3%).

Table 4A Line 3. Bulk supply export

We export small volumes of treated water (less than 0.5 MI/d) to Anglian Water at Finningley. The export is estimated based on meter readings obtained from 2 flow meters. This year's reported volume is as normal. The estimate for this year has been agreed in writing, by emails between Yorkshire Water and Anglian Water colleagues.

We export a tiny volume of treated water (less than 0.01 MI/d) to Severn Trent Water. The export is estimated based on meter readings. This year's reported volume is as normal. The estimate for this year has been agreed in writing, by emails between Yorkshire Water and Severn Trent Water colleagues.

Table 4A Line 4. Bulk supply import

We import a volume of raw water (approximately 50 MI/d) from Severn Trent Water, from Ladybower Reservoir to Rivelin Lower Reservoir. The data provided for this line is estimated based on daily flow data, from Severn Trent's flow meter. This year's reported volume is as normal. The estimate for this year has been confirmed in writing by letter from Severn Trent.

Table 4A Line 5. Distribution input

Distribution input is the average amount of potable water entering the distribution system. The data has been obtained from the company's 'Water into Supply' database. Water into Supply data are produced monthly, giving details of water treatment works outputs and demands within the regional forecasting zones.

Average Distribution Input is 11MI/d (0.9%) greater in 2018/2019 than in the previous report year. This is due to high customer demand in the prolonged warm, dry summer months, particularly June and July 2018 and high leakage levels in the first months of the report year following the impact of the 'Beast from the East' in March 2018.

Table 4B: Wholesale totex analysis

For the 12 months ended 31 March 2019

Line description		Units	DPs	Current year			Cumulative 2015-2020		
				Water	Wastewater	TTT	Water	Wastewater	TTT
A - Actual totex									
4B.1	Actual totex	£m	3	439.154	528.888	0.000	1417.468	1691.208	
B - Items excluded from the menu									
4B.2	Third party costs	£m	3	2.828	0.000		8.412	0.002	
4B.3	Pension deficit recovery payments	£m	3	6.142	5.677		24.391	28.031	
4B.4	Other 'Rule book' adjustments	£m	3	1.702	2.362		3.770	5.178	
4B.5	Total items excluded from the menu	£m	3	10.672	8.039	0.000	36.573	33.211	0.000
C - Transition expenditure									
4B.6	Transition expenditure	£m	3	0.000	0.000		10.176	5.025	
D - Adjusted Actual totex									
4B.7	Adjusted Actual totex	£m	3	428.482	520.849	0.000	1391.071	1663.022	0.000
4B.8	Adjusted Actual totex base year prices	£m	3	370.052	449.823		1,252.476	1,496.857	
E - Allowed totex									
4B.9	Allowed totex based on final menu choice – base year prices	£m	3	277.907	387.643		1199.467	1550.571	

Key

Input cell
 Calculation cell
 Copy cell

Please refer to RAG 4.08 - Guideline for the table definitions in the annual performance report for the reporting year 2018-2019

This table sets out totex expenditure in out-turn prices for wholesale operations analysed by price control for the 2018/2019 year, and cumulatively for the AMP. For further commentary to support this table, please see Table 2B.

Water service capital expenditure

Gross regulated capital expenditure associated with the Wholesale Water (WW) programme in the current reporting year was £197.7m. With the associated income totalling £17.0m the net expenditure in the current reporting year was £180.7m.

Capital expenditure associated with the WW programme in the current AMP period is overall broadly in line with the WW FD profile, excluding the management & general support programme. There have been movements between the investment areas and drivers. This was to fund both cost pressures to deliver our regulatory water quality improvements at some of our key water treatment works; as well as reprioritising of investment to support emerging performance issues.

Any WW programme efficiencies delivered to date have been re-invested to support our upper quartile programme to drive even higher service levels, by the end of the current AMP period, in Leakage and Water Supply Interruptions.

Capital grants and contributions totalling £17.0m on the WW programme in the current year are higher than that allowed in the FD. Capital contributions this AMP (£59.4m) are again higher than that allowed in the FD. Most of the grants and contributions' income is from either service diversions or new developments and connections but there has been a small amount of income received in other areas of the programme totalling £0.3m in the current report year. In the AMP we have seen a reduction in the overall requests for both mains diversions and new domestic connections than that identified in the FD. This, along with

a reduction to our water infra connection charge, in line with the new agreed charging arrangements at the start of the current report year, has led to a further reduction in income when compared to the FD. However, these reductions have been offset by the inclusion of Section 45 new water connections income which were not included within in the FD which total £29.6m to date.

Expenditure on the water management & general programme remains broadly in line with the original drivers allowed for in the FD. Further investment is being made within the current reporting period 2015-2020 to move to an updated SAP platform and expenditure within the current reporting year totals £26.3m of which 50% (£13.2m) is allocated to the water service. Additionally, a scheme to provide enhanced system data is currently ongoing with total expenditure within the current reporting year of £6.9m, again with 50% (£3.5m) allocated to the water service.

Atypical capital expenditure in previous years has related to the Flooding recovery programme, this year there is nil to report in relation to the water programme.

Within the current reporting year early start expenditure associated with AMP7 has been incurred. Work at Chellow Heights WTW has commenced incurring £38.5k of expenditure. Following a query submitted to Ofwat we have not included this sum within the table (or any other APR 2019 capital expenditure tables) and so this note is for references purposes only.

Waste water service capital expenditure

Gross regulated capital expenditure associated with the Wholesale Wastewater (WWW) programme in the current reporting year was £338.3m. With the associated income totalling £12.6m the net expenditure in the current reporting year was £325.6m.

Capital expenditure associated with the WWW programme in the current AMP period is behind the overall WWW FD profile when excluding the management & general support programme. As previously reported this is mainly due to the revision to the NEP5 programme post FD, that not only changed the sites included in the wastewater quality programme but revised many regulatory compliance dates to the end of the AMP period. Changing the expenditure profile significantly from the original quality plan.

Any WWW programme efficiencies delivered to date have been re-invested to support our upper quartile programme to drive even higher service levels by the end of the current AMP in Internal Flooding and Pollution.

Capital contributions totalling £12.6m on the wastewater programme in the current year are lower than that allowed in the FD. Capital contributions to date this AMP (£37.7m) are again lower than that allowed in the FD. Usually most of all grants and contributions income is collected from either service diversions or new developments and connections but there has been additional income received on other areas of the programme totalling £5.1m in the current year. This relates to income received from developers wanting to utilise our existing WwTW site at Stocksbridge for further new development. This is a site where we have a new quality obligation, so this income has been allocated against sewage treatment base and other

drivers to reflect the solution being delivered. In the AMP period we have seen a reduction in the overall requests for both sewer diversions and new domestic connections than that identified in the FD. This along with a reduction to our wastewater infra connection charge, in line with the new agreed charging arrangements at the start of the current report year, has led to a further reduction in income when compared to the FD.

Expenditure on the wastewater management & general programme remains broadly in line with the original drivers allowed for in the FD. Further investment however is being made within the current reporting period 2015-2020 to move to an updated SAP platform and expenditure within the current reporting year totals £26.3m of which 50% (£13.2m) is allocated to the wastewater service. Additionally, a scheme to provide enhanced system data is currently ongoing with total expenditure within the current reporting year of £6.9m again with 50% (£3.5m) allocated to the wastewater service.

Atypical capital expenditure in the year, as with previous years, relates to the Flooding recovery programme and totalled £12.5m in year. Further explanation of this expenditure can be found in table 4K.

Within the current reporting year early start expenditure associated with AMP7 has been incurred. Work relating to the WINEP programme has commenced incurring £312.4k of expenditure. Following a query submitted to Ofwat we have not included this sum within the table (or any other APR 2019 capital expenditure tables) and so this note is for references purposes only.

Reconciliation to the PR14 accounting for past delivery totex model

We have included a reconciliation from table 4B to the PR14 accounting for past delivery totex model showing the additional adjustments that have been included up until the end of 2018/2019, full details are included within the commentary for the PR19 submission.

Description	Wholesale Water	Wholesale Wastewater
Allowed totex based on final menu choice - base year prices	1199	1,551
Adjusted Actual totex base year prices	1,252	1,497
Variance to FD	(53)	54
Adjustment for water contacts - reinvestment of penalty	7	
Adjustment for insurance money received for flood claim		52
Reported variance in PR14 accounting for past performance at 31.03.2019	(46)	106

For further commentary to support this table, please see Table 2B.

Table 4C: Impact of AMP performance to date on Regulatory Capital Value (RCV)

For the 12 months ended 31 March 2019

Line description	Units	DPs	Water	Wastewater	TTT
4C.1 Cumulative totex over/underspend so far in the price control period	£m	3	-46.419	105.638	
4C.2 Customer share of cumulative totex over/underspend	£m	3	-31.108	51.755	
4C.3 RCV element of cumulative totex over/underspend	£m	3	17.749	-78.274	
4C.4 Adjustment for ODI outperformance payment or underperformance payment	£m	3	0.000	0.000	
4C.5 RCV determined at FD at 31 March	£m	3	2799.954	3886.599	
4C.6 Projected 'shadow' RCV	£m	3	2817.703	3808.325	0.000

Key

Input cell Calculation cell

Please refer to RAG 4.08 - Guideline for the table definitions in the annual performance report for the reporting year 2018-2019

Table 4C looks at projected adjustments to the Regulatory Capital Value (RCV) that are expected at the next price review.

Table 4C Line 1. This has been taken as the variance shown in 4B as at 2012/2013 average prices adjusted for the following:

Description	Wholesale Water	Wholesale Wastewater
Allowed totex based on final menu choice - base year prices	1199	1,551
Adjusted Actual totex base year prices	1,252	1,497
Variance to FD	(53)	54
Adjustment for water contacts - reinvestment of penalty	7	
Adjustment for insurance money received for flood claim		52
Reported variance in PR14 accounting for past performance at 31.03.2019	(46)	106

To calculate the inputs to lines 4C.2 and 4C.3 we have used the updated PR14 accounting for past performance totex model:

1. To only take into account the cumulative under/overspend to the end of 2018/2019 we have set the final year of the price control period to match the allowance and therefore no out/under performance in the final year.
2. The output for line 2 we have taken as the cumulative totex out/under performance, as reported in table 4B with the adjustments highlighted above, less the reward/penalty that the model is calculating on the 'calc' tab lines 93 and 94. This line has also been included as at 2012-2013 average prices

3. The output for line 3 has been taken as the forecast RCV adjustment that would occur at PR19 (price base 2012/2013 average inflated to March 2019)

4C.4 has been inputted as zero as we have no forecast RCV adjustments for our ODI performance.

4C.5 has been taken from the Ofwat published RCV as at March 2019 prices.

Table 4D: Totex analysis – wholesale water (further disaggregated into upstream services)

For the 12 months ended 31 March 2019

Line description		Units	DPs	Water resources	
				Abstraction licences	Raw water abstraction
A - Operating expenditure					
4D.1	Power	£m	3	0.000	2.014
4D.2	Income treated as negative expenditure	£m	3	0.000	0.000
4D.3	Abstraction charges/ discharge consents	£m	3	4.972	0.605
4D.4	Bulk supply	£m	3	0.000	3.867
4D.5	Other operating expenditure - renewals expensed in year (Infrastructure)	£m	3	0.000	0.000
4D.6	Other operating expenditure - renewals expensed in year (Non-Infrastructure)	£m	3	0.000	0.000
4D.7	Other operating expenditure - excluding renewals	£m	3	0.189	10.092
4D.8	Local authority and Cumulo rates	£m	3	0.000	7.401
4D.9	Total operating expenditure excluding third party services	£m	3	5.161	23.979
4D.10	Third party services	£m	3	0.000	0.000
4D.11	Total operating expenditure	£m	3	5.161	23.979
B - Capital expenditure					
4D.12	Maintaining the long term capability of the assets - infra	£m	3	0.000	11.590
4D.13	Maintaining the long term capability of the assets - non-infra	£m	3	0.000	1.584
4D.14	Other capital expenditure - infra	£m	3	0.000	1.405
4D.15	Other capital expenditure - non-infra	£m	3	0.000	4.005
4D.16	Infrastructure network reinforcement	£m	3	0.000	0.000
4D.17	Total gross capital expenditure (excluding third party)	£m	3	0.000	18.584
4D.18	Third party services	£m	3	0.000	0.000
4D.19	Total gross capital expenditure	£m	3	0.000	18.584
C - Grants and contributions					
4D.20	Grants and contributions	£m	3	0.000	0.185
4D.21	Totex	£m	3	5.161	42.378
D - Cash expenditure					
4D.22	Pension deficit recovery payments	£m	3	0.000	0.000
4D.23	Other cash items	£m	3	0.000	0.000
4D.24	Totex including cash items	£m	3	5.161	42.378
E - Unit cost information (operating expenditure)					
4D.25	Licenced volume available	MI	3	740358.328	
4D.25	Volume abstracted	MI	3		463749.988
4D.25	Volume transported	MI	3		
4D.25	Average volume stored	MI	3		
4D.25	Distribution input volume	MI	3		
4D.25	Distribution input volume	MI	3		
4D.26	Unit cost	£/MI	3	6.971	51.707
4D.27	Population	000s	3	5058.392	5058.392
4D.28	Unit cost	£/pop	3	1.020	4.740

Network Plus				Total
Raw water transport	Raw water storage	Water treatment	Treated water distribution	
5.606	0.001	11.590	14.145	33.356
0.000	0.000	-0.342	-0.024	-0.366
0.000	0.000	0.073	0.004	5.654
0.000	0.000	0.007	0.016	3.890
0.000	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000
2.987	1.366	42.843	117.597	175.074
1.853	0.645	1.058	27.062	38.019
10.446	2.012	55.229	158.800	255.627
0.000	0.000	0.000	2.828	2.828
10.446	2.012	55.229	161.628	258.455
0.061	0.067	0.000	34.376	46.094
1.239	0.350	45.039	30.406	78.618
0.000	0.000	0.000	30.580	31.985
0.015	0.012	17.730	17.582	39.344
0.000	0.000	0.000	1.614	1.614
1.315	0.429	62.769	114.558	197.655
0.000	0.000	0.000	0.000	0.000
1.315	0.429	62.769	114.558	197.655
0.000	0.000	0.074	16.697	16.956
11.761	2.441	117.924	259.489	439.154
0.000	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000
11.761	2.441	117.924	259.489	439.154

284629.976			
	3358.318		
		468276.750	
			468276.750
36.701	598.977	117.940	345.156
5058.392	5058.392	5058.392	5058.392
2.065	0.398	10.918	31.953

Key
 Input cell
 Calculation cell

Please refer to RAG 4.08 - Guideline for the table definitions in the annual performance report for the reporting year 2018-2019

Table 4D provides information relating to water services. This table provides information about the different activities undertaken as part of delivering upstream services. Water companies typically provide their customers with a water supply and remove their waste water and sewage. This requires sustainable water resources and water treatment facilities as well as sewerage treatment and disposal facilities. It also requires a network to transport the water and waste water.

Operating expenditure

The operating expenditure (excluding third party services) for Water has increased by £58m to £255m in 2018/2019 from £197m in 2017/2018. This increase of 30% in costs is mainly due to an increase in power and chemicals required for water treatment due to the extreme weather conditions experienced in summer 2018. In addition wholesale water has seen a significant increase in costs on treated water distribution due to an increased level of bursts contributed by the additional pumping around the grid to ensure supply was maintained across the region to ensure that customer need were met in this escalated period.

The operating cost lines in the tables have not been adjusted to exclude the pension deficit contribution. This is because Yorkshire Water's defined Benefit scheme is accounted for under the FRS102 accounting standard which applies the same rules as a defined contribution scheme. Historical pension scheme deficit cannot be allocated between the different group entities. This results in all cash contributions being recognised as operating expenditure, including pension deficit contributions. The treatment contrasts to most other WASC's who have adopted IFRS and are required to follow defined benefit pension scheme accounting, therefore excluding cash contributions in excess of the IAS 18 defined benefit pension cost from the operating expenditure. The unit rate information on tables 4D and 4E use the operating costs line to calculate the unit price, as a result Yorkshire Water's rate appear slightly higher than the other companies who exclude these pension contributions. We have confirmed this approach with Ofwat, and is consistent approach with that adopted in 2017/2018.

More detail on unit prices is available within the accounting methodology statement in Appendix 3.

Capital expenditure and grants and contributions

Gross regulated capital expenditure associated with the Wholesale Water (WW) programme in the current reporting year was £197.7m. With the associated income totalling £17.0m the net expenditure in the current reporting year was £180.7m.

When comparing the actual capital expenditure both in year and to date against the FD we include any investment identified as repair (IAS16) that is then re-allocated at each year end to operating costs. The water IAS16 element transferred to Opex in the current report year totals £11.5m and the cumulative total to date this AMP period £44.5m.

Whilst the total capital expenditure associated with the WW programme to date of £540.8m in the current AMP period is overall broadly in line with the WW FD profile when excluding the management & general support programme, there have been movements between the investment areas and drivers. This was to fund both cost pressures to deliver our regulatory water quality improvements at some of our key water treatment works; as well as reprioritising of investment to support emerging performance issues. Any WW programme efficiencies delivered to date have been re-invested to support our upper quartile programme to drive even higher service levels, by the end of the current AMP period, in Leakage and Water Supply Interruptions.

Capital grants and contributions totalling £17.0m on the water programme in the current year are higher than that allowed in the FD. Capital contributions to date this AMP totalling £59.4m are again higher than that allowed in the FD. Most of the grants and contributions' income is from either service diversions or new developments and connections but there has been a small amount of income received in other areas of the programme totalling £0.3m in the current report year. In the AMP we have seen a reduction in the overall requests for both mains diversions and new domestic connections than that identified in the FD. This, along with a reduction to our water infra connection charge, in line with the new agreed charging arrangements at the start of the current report year, has led to a further reduction in income when compared to the FD. However, these reductions have been offset by the inclusion of Section 45 new water connections income which were not included within in the FD which total £29.6m to date.

In comparison to last year net expenditure is 6% higher and has supported the delivery of our water and cross-business performance commitments.

Within the current reporting year early start expenditure associated with AMP7 has been incurred. Work at Chellow Heights WTW has commenced incurring £38.5k of expenditure. Following a query submitted to Ofwat we have not included this sum within the table (or any other APR 2019 capital expenditure tables) and so this note is for references purposes only.

Investment to date and in the current report year has allowed us to maintain our Drinking Water Quality performance and any resulting Significant Drinking Water Events and although we have not met the 100% compliance target set for water quality compliance we have continued to deliver high levels of performance within the deadband performance allowed, without generating any financial penalty.

In the current report year, we have seen our best performance on Water Quality Contacts and although we have not met the stretching targets set we have further reduced the number of contacts, despite the water network being impacted throughout the year by the extreme wintery conditions of the Beast from the East followed by the prolonged dry weather over the summer. Not meeting our target performance for the third year in succession has resulted in us generating a financial penalty which the Board agreed to re-invest in full to support future service level improvements within the water programme and then subsequently agreed at the Customer Forum as part of our upper quartile plans.

We continue to maintain our stable forecast on both the water long-term stability and reliability factor commitments, water quality and networks, with most sub-measures meeting target measures. Only mains bursts is higher this report year due to the high level of activity being undertaken on the network to reduce leakage.

Our most challenging PC target to meet this year has been Leakage and, as stated above, despite the water network being impacted throughout the year by the extreme wintery conditions of the Beast from the East followed by the prolonged hot and dry weather over the summer, we have managed to further reduce leakage in the current year and meet the target performance. Whilst meeting the current year's target by recruiting and re-prioritising additional resources we were also targeting to reduce leakage even further as part of our upper quartile plans. We have promoted more investment, to allow us to better target and continue to promote a higher number of find and fix jobs, driving leakage down even further in the last year of the AMP.

We have again bettered our in-year target performance for Water Supply Interruptions attracting a reward for the third year in succession.

Total net capital investment of £57.6m, before the re-allocation of IAS16 repair investment to operating costs, to maintain the long-term capability of the infrastructure water assets has decreased in comparison to last year which peaked at £65.9m but remains higher than previous years of the AMP period. Once the IAS16 repair investment of £11.5m is reallocated the in-year investment reported in the table totals £46.1m. In the current reporting year the majority of expenditure driving this investment (4D.12) is split over raw water abstraction (£11.6m) and treated water distribution (£34.4m) price controls.

The raw water abstraction investment targets statutory, as well as health and safety, improvements on our reservoir safety assets. Significant investment in the report year has been at Redmires Upper IRE, Windledon Lower, Butterley and Ten Acre IREs to deliver structural improvements on spillways and embankment improvements, to reduce seepage which is work that has been identified by external Quality Control Engineers (QCE's) as part of our ongoing statutory inspection and improvement programme.

The treated water distribution, as in previous years, mainly comprises delivery batches to continue our renewal and refurbishment of the water network, as part of the structural mains investment driver or annual reactive block allocations. This supports our leakage improvement plan by replacing or increasing the number of distribution network assets, like communication pipes, stoptaps, distribution pipework fittings or pressure reduction or pressure logging devices, to ensure we can better manage our wider water network and grid. This structural investment is made up of a mixture of smaller delivery batches targeting mains refurbishment on assets that have previously had a high number of bursts and repairs; a reactive block to target smaller repairs where mains bursts cannot be repaired and have to be replaced; and significant investment on the Bradford Cross City Main (£1.2m), which had previously been taken out of service after a catastrophic failure, which when complete will deliver additional resilience to the water network grid.

Total net capital investment of £78.6m to maintain the long-term capability of the non-infrastructure water assets has increased from last year and previous years within the current AMP. Most of the expenditure driving (4D.13) is split across the water treatment (£45.0m) and treated water distribution (£30.4m) price controls and includes £28.0m of management and general costs that support the business and are apportioned across all price controls.

The water treatment investment is made up of the annual block (£3.5m) that replaces all MEICA failed assets on a rolling programme, continued investment on water treatment assets (£15.8m) to support our Health & Safety improvement plan, as well as major base maintenance investment in the current year at Irton & Langsett WTWs (£1.7m) to support delivery of our water quality improvements at these sites. The remaining water treatment investment is spread over many of our water treatment works to ensure that we maintain our assets, to ensure continued supply of clean and safe water to our customers.

The treated water distribution investment is made up of continued but reduced investment to exchange customer meters (£1.8m) to ensure correct usage and billing of water. This investment has reduced as the internal resources used to support this programme of work have been supporting the leakage reduction plan. Further investment on our distribution assets (£2.9m) to add flow and pressure meters for early detection of leaks to support the leakage reduction plan. The remaining investment has been to maintain our raw water and distribution pumping assets (£4.0m) and service reservoir assets (£1.8m), to ensure continued supply of clean and safe water to our customers and to make any health and safety improvements.

Expenditure on the water management & general programme remains broadly in line with the original drivers allowed for in the FD. However, further investment is being made within the current reporting period 2015-2020 to move to an updated SAP platform and expenditure within the current reporting year totals £26.3m of which 50% (£13.2m) is allocated to the water service. Additionally, a scheme to provide enhanced system data is currently ongoing with total expenditure within the current reporting year of £6.9m, again with 50% (£3.5m) allocated to the water service.

Further detailed information on the expenditure in lines 4D.14 and 4D.15 can be found in the commentary for table 4L which identifies all enhancement expenditure by purpose.

Information on the expenditure in line 4D.16 can be found in the commentary for table 2J.

We have, as in previous years, no capital expenditure reported to 4D.18 third party services.

Please note that following the recent changes that have come into force within Condition F of our licence, that state that all companies must comply with all requirements set out in the Regulatory Accounting Guidelines, we are writing to restate our position with regards to principal use.

We have continued to allocate capital costs using PACE allocation rather than principal use as we still believe that this is the most accurate way to report capital expenditure to meet Ofwat's cost allocation principles.

Therefore, our management & general support programme continues to be proportionately allocated to the Water and Waste Water programmes in line with our FD with 48% being allocated to Water. Whilst this is consistent with our allocation in the FD this is not in line with the principle use guidance Ofwat have issued.

While we endeavour to meet all guidance, we have consulted and reviewed different interpretations of the policy and have found that results can vary significantly depending on the interpretation of what is meant by "use". At this time, we have decided, following consultation with our external auditor Jacobs, that until we receive further clarity the most accurate way to allocate costs for these support services remains through proportional allocation, using investment categories linked to service area.

Comparison to PR19 submission.

As part of our PR19 submission we submitted forecast outturn numbers for the last two years of the current AMP. Comparing the actual expenditure in 2018/2019 against the numbers submitted for PR19, we outturned within 2% of our overall forecast within the wholesale water programme however there have been changes to the programme delivered due to reprioritisation of investment to support new emerging risks.

Within the Base Infra programme we have seen increased expenditure to deliver our remaining Reservoir safety improvements as well as additional spend to maintain leakage service levels despite ever changing weather patterns. This increased investment has partly been offset by a reduction in Base Non-infra expenditure with customer metering expenditure reduced in the current year as resources been re-allocated to provide additional support for our leakage improvement programme. There have also been delays to delivering one of our service reservoir improvements at Boston Park SRE due to land purchase and planning issues.

We have seen additional capital contributions in the report year in comparison to our submitted forecasts after we changed our infrastructure connection charge rates at the start of the current report year. In our forecast we expected an immediate shift to the lower infra connection charge but with some developments already been in contract at the previous rate and a six-month transition period we haven't seen the reduction expected, as well as seeing an increase in the report year on the number of new water connections.

Unit Cost Information

Data provided in Line 25 has been reported following guidance provided in 'Disaggregation of wholesale activities - upstream services' of Ofwat RAG 4.08.

Water resources - Abstraction licences. Licenced volume available is the volume of water available for public water supply. This is the total volume of all live abstraction licences held by Yorkshire Water for the purpose of public water supply. There is a slight reduction in licensed abstraction volume in 2018/2019 compared to last year due to the revocation of an unused/unusable reservoir abstraction (the reservoir is being decommissioned).

Water resources - Raw water abstraction. Volume abstracted aligns with annual abstraction returns provided to the Environment Agency for each abstraction licence. The abstraction returns to the Environment Agency are reported on a financial year basis by 30 April each year. Total raw water abstracted in 2018/2019 was 463,749.9 MI which is a marginal increase from last year (less than 2%). This increased abstraction can be explained by increased demand for water by household and non-household customers during the dry, warm months experienced in Summer 2018.

Volume transported (Network + Raw water transport). The volume of water transported in 2018/2019 has increased by 3,739 MI (1.3%) compared to the previous year. Reservoirs were adversely affected by the dry weather, seeing reductions in volume. This shortfall was made up by increased river abstractions on the rivers Ouse, Ure and Wharfe, with 15,264 MI more river water abstracted and transported in 2018/2019 than in 2017/2018.

Average volume stored (Network + Raw water storage). We have re-examined the reporting guidance for Table 4D Line 25 (RAG 4.08 part 2 disaggregation of wholesale activities - upstream services and Appendix 2 to RAG 4.08 (Water resources further guidance)) to ensure correct allocation of raw water storage assets to Water resources - Raw water abstraction and Network plus - raw water storage.

Following this, we have carried out an assessment to ensure that the only assets included in 4D.25 Average volume stored comply with the Network plus – Raw water storage definition, in that they:

- Have no abstraction licence
- Have no natural catchment
- Do not support another abstraction
- Have less than 15 days storage

This has resulted in a change in the volume reported, as shown for APR19 and the previous three years in the table below.

	4D.25 Average volume stored (MI)	
	Old methodology	Revised methodology
2015/2016	90,053	3257.643
2016/2017	120,945	3250.426
2017/2018	119,057	3174.935
2018/2019	123,960	3358.318

The revised numbers have been assured by our external auditor.

We consider there to be some inconsistency in this data compared with other data provided in this table. The RAGs state that this line is the average volume stored based on at least monthly measurements. We obtain our storage measurements generally on a weekly basis and have provided an average as per the guidance. However, this is inconsistent with other information provided across the table, which provides a total for the year.

The volume of raw water stored increased in 2018/2019, reflecting an increased use of pumped river sources during the dry summer months in 2018 to preserve reservoir stocks.

Volume from water treatment and volume from treated water distribution. These data report Distribution Input volume in MI on an annual rather than daily basis. Distribution input and volume from water treatment is the average amount of potable water entering the distribution system. The data has been obtained from the company's 'Water into Supply' database. Water into Supply data are produced monthly, giving details of water treatment works outputs and demands within the regional forecasting zones. Distribution Input and volume from water treatment is greater in 2018/2019 than in the previous report year. This is due to high customer demand in the prolonged warm, dry summer months, particularly June and July 2018 and high leakage levels in the first months of the report year following the impact of the 'Beast from the East' in March 2018.

Total Population

The total water population for 2018/2019 has been estimated from average property numbers multiplied by occupancy rates for measured and unmeasured households and unmeasured non-households plus the estimated communal (measured non-household) population for the year. Average billed property numbers for the report year for measured households, unmeasured households and unmeasured non-households are obtained from the billing file. These are multiplied by estimated occupancy rates for the different property categories to give estimated populations. The occupancy rates used were determined through customer research undertaken for the Water Resources Management Plan 2014 (WRMP14). The estimated populations are then added to the reported communal population (measured non-household population) from the 2011 Census to give the total population.

Total population has increased in the report year by 13,000 (0.25%) and is forecast to increase in AMP6 and AMP7.

Table 4E: Totex analysis – wholesale waste water (further disaggregated into upstream services)

For the 12 months ended 31 March 2019

Line description		Units	DPs	Network Plus sewage collection		
				Foul	Surface water drainage	Highway drainage
A - Operating expenditure						
4E.1	Power	£m	3	2.086	1.281	0.495
4E.2	Income treated as negative expenditure	£m	3	0.000	0.000	0.000
4E.3	Discharge consents	£m	3	0.966	1.065	0.446
4E.4	Bulk discharge	£m	3	0.000	0.000	0.000
4E.5	Other operating expenditure - renewals expensed in year (Infrastructure)	£m	3	0.000	0.000	0.000
4E.6	Other operating expenditure - renewals expensed in year (Non-Infrastructure)	£m	3	0.000	0.000	0.000
4E.7	Other operating expenditure - excluding renewals	£m	3	24.139	23.344	12.500
4E.8	Local authority rates and Cumulo rates	£m	3	0.064	0.057	0.038
4E.9	Total operating expenditure excluding third party services	£m	3	27.255	25.746	13.479
4E.10	Third party services	£m	3	0.000	0.000	0.000
4E.11	Total operating expenditure	£m	3	27.255	25.746	13.479
B - Capital Expenditure						
4E.12	Maintaining the long term capability of the assets - infra	£m	3	14.569	16.063	6.724
4E.13	Maintaining the long term capability of the assets - non-infra	£m	3	7.432	7.110	4.322
4E.14	Other capital expenditure - infra	£m	3	10.058	11.089	4.642
4E.15	Other capital expenditure - non-infra	£m	3	7.676	8.365	3.624
4E.16	Infrastructure network reinforcement	£m	3	0.629	0.694	0.291
4E.17	Total gross capital expenditure (excluding third party services)	£m	3	40.364	43.321	19.603
4E.18	Third party services	£m	3	0.000	0.000	0.000
4E.19	Total gross capital expenditure	£m	3	40.364	43.321	19.603
C - Grants and contributions						
4E.20	Grants and contributions	£m	3	3.107	3.426	1.434
4E.21	Totex	£m	3	64.512	65.641	31.648
D - Cash Expenditure						
4E.22	Pension deficit recovery payments	£m	3	0.000	0.000	0.000
4E.23	Other cash items	£m	3	0.000	0.000	0.000
4E.24	Totex including cash items	£m	3	64.512	65.641	31.648
E - Unit cost information (operating expenditure)						
4E.25	Volume collected	MI	3	301137.410		
4E.25	Volume collected	MI	3		433523.422	
4E.25	Volume collected	MI	3			117051.324
4E.25	Biochemical Oxygen Demand (BOD)	Tonnes	3			
4E.25	Biochemical Oxygen Demand (BOD)	Tonnes	3			
4E.25	Volume transported	m3	3			
4E.25	Dried solid mass treated	ttds	3			
4E.25	Dried solid mass disposed	ttds	3			
4E.26	Unit cost	£/unit	3	90.508	59.388	115.156
4E.27	Population	000s	3	5181.959	5181.959	5181.959
4E.28	Unit cost	£/pop	3	5.260	4.968	2.601

Key
 Input cell
  Calculation cell

Network Plus sewage treatment		Sludge			Total
Sewage treatment and disposal	Imported sludge liquor treatment	Sludge transport	Sludge treatment	Sludge disposal	
27.699	0.131	0.003	-1.734	0.000	29.961
-0.440	0.000	0.000	-1.733	0.000	-2.173
4.255	0.000	0.000	0.000	0.180	6.912
0.000	0.000	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000	0.000
49.669	0.945	6.758	19.364	11.990	148.709
18.344	0.004	0.014	1.313	0.010	19.843
99.527	1.080	6.775	17.210	12.179	203.253
0.000	0.000	0.000	0.000	0.000	0.000
99.527	1.080	6.775	17.210	12.179	203.253
0.149	0.000	0.000	0.000	0.000	37.505
76.901	0.387	1.483	60.947	0.189	158.771
0.000	0.000	0.000	0.000	0.000	25.789
90.854	0.035	0.135	3.876	0.017	114.582
0.000	0.000	0.000	0.000	0.000	1.614
167.904	0.422	1.618	64.823	0.206	338.261
0.000	0.000	0.000	0.000	0.000	0.000
167.904	0.422	1.618	64.823	0.206	338.261
4.659	0.000	0.000	0.000	0.000	12.626
262.772	1.502	8.393	82.033	12.385	528.888
0.000	0.000	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000	0.000
262.772	1.502	8.393	82.033	12.385	528.888
128360.910	5257.354	1151007.077	150.858	170.997	
775.367	205.450	5.886	114082.516	71226.311	
5181.959	5181.959	5181.959	5181.959	5181.959	
19.206	0.208	1.307	3.321	2.350	

Please refer to RAG 4.08 - Guideline for the table definitions in the annual performance report for the reporting year 2018-2019

Table 4E provides an analysis of the wholesale waste water upstream services, from sewerage collection to sludge disposal.

Operating expenditure

The operating expenditure for Waste Water has increased by £21m to £203m in 2018/2019 from £182m in 2017/2018. This increase in costs is mainly due to an increase in Hired and Contracted Services which is a combination of increased use of tankering due to the long lead time on parts or capital intervention on assets suffering downtime. Furthermore, there is an increased focus on the service improvement plan to reduce backlog, and the business is working towards achieving the enhanced performance commitments for AMP7 through the costs of running Proactive Sewer Investigations and the educational plan for customers to address sewer flooding.

The operating cost lines in the tables have not been adjusted to exclude the pension deficit contribution. This is because Yorkshire Water's defined Benefit scheme is accounted for under the FRS102 accounting standard which applies the same rules as a defined contribution scheme. Historical pension scheme deficit cannot be allocated between the different group entities. This results in all cash contributions being recognised as operating expenditure, including pension deficit contributions. The treatment contrasts to most other WASC's who have adopted IFRS and are required to follow defined benefit pension scheme accounting, therefore excluding cash contributions in excess of the IAS 18 defined benefit pension cost from the operating expenditure. The unit rate information on tables 4D and 4E use the operating costs line to calculate the unit price, as a result Yorkshire Water's rate appear slightly higher than the other companies who exclude these pension contributions. We have confirmed this approach with Ofwat, and is consistent approach with that adopted in 2017/2018.

Capital expenditure and grants and contributions

Gross regulated capital expenditure associated with the Wholesale Wastewater (WWW) programme in the current reporting year was £338.3m. With the associated income totalling £12.6m the net expenditure in the current reporting year was £325.6m.

When comparing the actual capital expenditure both in year and to date against the FD we include any investment identified as repair (IAS16) that is then re-allocated at each year end to operating

costs. The wastewater IAS16 element transferred to Opex in the current report year totals £10.9m and the cumulative total to date £34.6m.

The total capital expenditure associated with the WWW programme to date of £798.1m in the current AMP period is behind the overall WWW FD profile when excluding the management & general support programme. As previously reported this is mainly due to the revision to the NEP5 programme post FD, that not only changed the sites included in the wastewater quality programme but revised many regulatory compliance dates to the end of the AMP period. Changing the expenditure profile significantly from the original quality plan.

Any WWW programme efficiencies delivered to date have been re-invested to support our upper quartile programme to drive even higher service levels by the end of the current AMP in Internal Flooding and Pollution.

Capital contributions totalling £12.6m on the wastewater programme in the current year are lower than that allowed in the FD. Capital contributions to date this AMP totalling £37.7m are again lower than that allowed in the FD. Usually most of all grants and contributions income is collected from either service diversions or new developments & connections but there has been additional income received on other areas of the programme totalling £5.1m in the current year. This relates to income received from developers wanting to utilise our existing WwTW site at Stocksbridge for further new development. This is a site where we have a new quality obligation, so this income has been allocated against sewage treatment base and other drivers to reflect the solution being delivered. In the AMP period we have seen a reduction in the overall requests for both sewer diversions and new domestic connections than that identified in the FD. This along with a reduction to our wastewater infra connection charge, in line with the new agreed charging arrangements at the start of the current report year, has led to a further reduction in income when compared to the FD.

In comparison to last year net expenditure is 35% higher and has supported the delivery of our wastewater and cross business performance commitments.

Within the current reporting year early start expenditure associated with AMP7 has been incurred. Work relating to the WINEP programme has commenced incurring £312.4k of expenditure. Following a query submitted to Ofwat we have not included this sum within the table (or any

other APR 2019 capital expenditure tables) and so this note is for references purposes only.

Investment to date, and in the current report year, has allowed us to increase activity to reduce the number of internal and external flooding incidents our customers suffer due to the failure of our assets. We have again bettered our in-year target performance for internal flooding, attracting a reward for the third year in succession.

Pollution performance in year has been mixed. We have earned a fourth consecutive year of reward following a reduction in the number of category 3 incidents from last year. However, disappointingly we have seen an increase in the number of category 1 and 2 serious pollution incidents. This is despite increasing the level of activity and expenditure in this area. We will continue to review and change our strategy with regards to pollution prevention to drive down all pollution incidents.

We continue to maintain our stable forecast on both wastewater long term stability and reliability factor commitments, sewer networks and waste water quality, with most sub-measures meeting or bettering their targets. The only sub-measure in these baskets failing to meet its' target is the properties flooded due to other causes measure which has remained high in the current report year, however following data provided for external audit with Jacobs they assessed this sub-measure as 'deteriorating'. All other sub-measures within the basket have been assessed as stable as has the overall stability and reliability factor.

Although the length of river improved PC target is only reported in year 5 most of the expenditure uplift in report year has been to deliver our waste water quality regulatory outputs agreed as part of the National Environment Programme. Most these solutions are now in delivery and on all are on track to meet March 2020 compliance dates.

Total net capital investment of £43.2m, before the re-allocation of IAS16 repair investment to operating costs, to maintain the long-term capability of the infrastructure wastewater assets has increased in comparison to last year but is a reduction from 2016/2017 which peaked at £47.0m. Once the IAS16 repair investment is reallocated the in-year investment reported totals £37.5m. In the current reporting year the expenditure driving (4E.12) is split over the three categories under the Network+ Sewage Collection price control of foul (£14.6m), surface water drainage (£16.1m) and highway drainage (£6.7m). As in previous returns the total investment on our wastewater base infra assets has been apportioned across the three categories by the headcount in each area.

The total investment has allowed us to continue to deliver external flooding improvements (£1.5m) for high profile issues at Old Heybeck Lane, New Pasture Close & Chapel Lane in Beverley and Linton Meadows in Craven district by providing additional sewer capacity or storage to resolve these issues. We continue to invest on annual reactive blocks and emergency reactive solutions to find the root cause of the flooding by CCTV, such as sewer blockages and collapses, and then resolve internal flooding due to other causes (£6.6m). To date this AMP we have renewed the majority of our drainage area plans for the whole region that allow us to target high risk issues on our sewer networks but continue to maintain these models (£2.2m) for the remainder of the AMP. The majority of the investment has been to renew or refurbish our sewer network (£26.1m), to stop escapes that could lead to pollution or external flooding. We continue to invest on annual reactive blocks and emergency reactive solutions (£15.2m) as part of our ongoing repair and maintenance contract, with the remainder of the investment to deliver planned solutions to refurbish high risk sewers across the region and rising mains at Dale Road and East Cottingwith.

In the current reporting year, the expenditure totalling £158.8m driving (4E.13) is split over the three categories under the Network+ Sewage Collection (£18.9m), Network + Sewage Treatment (£77.3m) and Sludge (£62.6m) price controls.

As in previous returns the total investment on our wastewater base infra assets in Network+ Sewage Collection has been apportioned across the three categories by the headcount in each area. This total investment has allowed us to continue to support our Health & Safety improvement plan (£2.3m), the annual block (£2.1m) that replaces all MEICA failed assets on a rolling programme, with the remaining investment spread over improvements at our sewage pumping stations, to ensure that we maintain our assets to ensure we transport sewage to our works for treatment and safe disposal.

Expenditure within Network + Sewage Treatment price control has allowed us to support our Health & Safety improvement plan (£9.1m), continue the annual block (£6.4m) that replaces all MEICA failed assets on a rolling programme, with the remaining investment spread over improvements at our wastewater treatment works to ensure that we maintain our assets to ensure treatment and safe disposal of all sewerage with significant investment at Beverley WWTW (£7.3m), Whitby WWTW (£4.1m), Goole Carr Lane (£3.0m), Hull WWTW (£2.3m) and Esholt WWTW (£1.7m).

Expenditure within Sludge price control has allowed us to support our Health & Safety improvement plan (£1.8m), continue the annual block (£0.8m) that replaces all MEICA failed assets on a rolling programme. Investment has continued to deliver the two new sludge facilities at Knostrop (£11.2m) and CVAD Huddersfield (£6.5m), with the remaining investment spread over improvements at our sludge facilities to ensure that we maintain our assets to ensure treatment and safe disposal of all sludges created by our treatment processes. This has seen significant investment at Dewsbury STF, Hull digestors, Blackburn Meadows and Whitby sludge assets.

Expenditure on the wastewater management & general programme remains broadly in line with the original drivers allowed for in the FD. Further investment however is being made within the current reporting period 2015-2020 to move to an updated SAP platform and expenditure within the current reporting year totals £26.3m of which 50% (£13.2m) is allocated to the wastewater service. Additionally, a scheme to provide enhanced system data is currently ongoing with total expenditure within the current reporting year of £6.9m again with 50% (£3.5m) allocated to the wastewater service.

Information on the expenditure in lines 4E.14 and 4E.15 can be found in the commentary for table 4M.

Information on the expenditure in line 4E.16 can be found in the commentary for table 2J.

We have, as in previous years, no capital expenditure reported to 4D.18 third party services.

Please note that following the recent changes that have come into force within Condition F of our licence that state that all companies must comply with all requirements set out in the Regulatory Accounting Guidelines we are writing to restate our position with regards to principal use.

We have continued to allocate capital costs using PACE allocation rather than principal use as we still believe that this is the most accurate way to report capital expenditure to meet Ofwat's cost allocation principles.

Therefore, our management & general support programme continues to be proportionately allocated to the Water and Wastewater programmes in line with our FD with 52% being allocated to wastewater. Whilst this is consistent with our allocation in the FD this is not in line with the principle use guidance Ofwat have issued.

While we endeavour to meet all guidance, we have consulted and reviewed different interpretations of the policy and have found that results can vary significantly depending on the interpretation of what is meant by "use". At this time, we have decided, following consultation with our external auditor Jacobs, that until we receive further clarity the most accurate way to allocate costs for these support services remains through proportional allocation, through the use of investment categories linked to service area.

Comparison to PR19 submission.

As part of our PR19 submission we submitted forecast outturn numbers for the last two years of the current AMP. Comparing the actual expenditure in 2018/2019 against the numbers submitted for PR19, we out turned within 4% of our overall forecast within the wholesale wastewater programme and there has been a change in the mix of the programme delivered.

Within the Base Infra programme we have seen delivery delays within both our Internal Flooding Other Causes and Sewer rehabilitation programmes of work with solutions now being re-forecast into the next year. This reduction has been offset by an acceleration within the Base non-infra programme on improvements to our Sludge treatment assets.

We have seen a reduction on capital contributions in the report year in comparison to our submitted forecasts as some of the new development projects forecast to start this year have been delayed. This reduction has been offset in part due to changes to our infrastructure connection charge rates at the start of the current report year. We expected an immediate shift to the lower infra connection charge but with some developments already being in contract at the previous rate and a six-month transition period we haven't seen the reduction in income forecast, as well as seeing an increase in the report year on the number of new wastewater connections.

Unit Cost Information

Volume Collected

These are separated by the origin of the wastewater, comprising domestic foul sewage, surface water drainage and highway drainage.

Volume Collected Foul is the sum of:

- Volume of trade effluent discharged to sewerage system. (Trade effluent is any discharge which is not “domestic”)
- Volume of measured household sewage
- Volume of measured non-household sewage
- Volume of unmeasured household sewage
- Volume of unmeasured non-household sewage

The figure reported is a sum over the financial year, reported in Ml/year.

Volume of trade effluent is sourced directly from Table 4R.12, which has been calculated using CMOS billing system of Trade Effluent customers and separately audited.

Volume of measured sewage (household & non-household) is sourced from Yorbill billing systems and uses measured data to provide the distributed volume and then a 95% returned to sewer rate is applied.

Volumes of unmeasured sewage (household & non-household) data is calculated using the number of properties from Yorbill system without a meter and applying an occupancy rate per household to provide an unmeasured population. A per capita consumption figure is then applied to this population figure to provide the volume distributed to the household. This volume then has the 95% returned to sewer calculation applied.

The figure being reported in APR19 is 30,113.410 Ml/year, which is a 0.9% increase over APR18. This equates to an additional 2,692.640 Ml being used by customers over the financial year in comparison to the previous year. The increase is expected due to the higher than average temperatures in the summer, which increased customer demand.

Volume collected – Surface water drainage and volume collected – highway drainage. This represents the volumes collected by the sewerage network for surface water drainage and highway drainage, in two separate lines. These flows are not specifically measured by the company and have been derived historically through the application of a number of calculations, based on some high-level property area and impermeability assumptions.

The data set in relation to the area drained from non-household properties has been improved this year. The calculation has changed from previous years, by removing the fixed 1000m²/property assumption for non-household properties and instead utilising the Area Drained data

from the CMOS system used by the business retail market. This now reflects how non-household properties are charged by their retailers, using the Yorkshire Water wholesale tariffs. This is a more representative way of deriving the non-household contribution to the drainage volumes.

Although the previous methodology for assessing business premises, which was based on the YorBill property count minus the domestic properties categorisation, led to a greater number of properties being assessed as being businesses, the CMOS Area Drained data approach results in an average impermeable area at 1,428m² per property rather than the 1,000m² previously used. Therefore, the effect of the new approach is a higher overall impermeable area being introduced into the calculation.

A further improvement has been made in using recorded raingauge data across the region. The data for these raingauges has been provided by the Environment Agency. Eight representative raingauges have been used to take into consideration the spatial variation of rainfall across the region (ranging from a peak annual rainfall value of 1064mm and a minimum of 512mm). The rainfall from these gauges has been allocated to both commercial and household properties using the Voronoi methodology. The areas from both property types has then been factored against the recorded rainfall for each of the raingauge regions to give the total volumes assessed as drainage. The previous methodology only used the average rainfall for the whole region and was therefore limited in terms of considering the spatial variation of rainfall.

To provide context, it should be noted that the average rainfall recorded for our region has fallen from 813mm in 2017/2018 to 691mm in 2018/2019 (a 15% decline).

The change in methodology around non-household properties (business), has resulted in a change in calculated contribution to drainage volumes from 82,602,194m³ to 115,700,346m³ (using a like for like comparison in property numbers in this category).

Overall, the volumes collected for surface water drainage has remained stable compared to last year’s figure (higher total impermeable area offset with lower rainfall).

The volumes collected for highway drainage has increased by 19% compared to last year’s figure. This is a result of the changes in methodology discussed above, given the average reduction in annual rainfall across the region, coupled with the increase in connected property numbers reported within the year and proportion of area attributed to highways and paths.

The properties connected data has been extracted from our billing system as a snapshot in time near the end of the year. This approach differs to other connected properties data in the APR, which are provided on an average connected in the month approach.

The methodology also includes “void properties”, as the drainage from those properties still drains to the sewerage system, despite the properties not being billed or occupied. This approach means that there is not a direct comparison to the property numbers used in this methodology compared to other reporting lines.

The drainage volume numbers for the future will be linked to the amount of rainfall and the connected properties but will be influenced by our Surface Water Management Performance Commitment, which looks to reduce the amount of area connected to our network over time.

Biochemical Oxygen Demand: Sewage Treatment & Disposal.

Biochemical oxygen demand (BOD) in tonnes. This is the total pollution load in tonnes BOD/year that is discharged to the sewerage system. This is interpreted to mean the inclusion of all sources of load, i.e. Resident Population, Holiday Population, Trade Effluent, Domestic Tanker Load. The figure reported is a sum over the financial year, reported in tonnes BOD/year.

The figure reported for 2018/2019 is 128,360.910 BOD/year tonnes, which is a 1.95% increase over the previous year. This ties in with the figure reported in Table 4E Line 25 Volume collected foul which had an increase of 0.9%. The load increase can also be attributed to the Trade Effluent proportion of the Volumes collected foul which shows an increase of 15%.

Biochemical Oxygen Demand: Sludge liquor treatment.

To calculate the total amount of BOD, measurements are needed for the liquor volume and concentration of BOD. Currently we do not measure the liquor flows or their concentration of BOD. We can calculate the liquor volume from the thickener or de-watered sludge feed flow and the change in dry solids concentration; which is an accurate methodology. However, we do not measure the concentration of BOD therefore text book estimates were applied to these derived liquor volumes to arrive at our reported figure. The same methodology for determination was used as the last years submission although refinements to the model have resulted in a lower theoretical load shown to be returned for treatment by using more accurate digester feed % DS were available. Further improvement to this data is planned by introducing a filtrate and centrate sampling program allowing real load concentration data to be entered in future years.

Sludge transport.

The measure of sludge volume transported is meters cubed and does not differentiate between liquid and cake. The data shows an increase of circa 9% transported volume from the previous year, a similar TDS has been moved by tankers from the previous year however the increasing volume is a direct consequence of a reduction in solids content.

Dried solid mass treated.

This data shows how much sludge we produced as a business and how much we disposed (or recycled) in thousand tonnes of dry solids (ttds). These figures are not necessarily the same figure because Yorkshire Water has storage capacity which we may choose to use or not, for strategic reasons. Yorkshire Water also has legacy stocks of material which may need to be disposed in a different year to when the material was produced.

In 2018/2019, we are reporting a very slightly higher ttds of sludge treated than in 2017/2018, of 151.1 ttds. This year's figure remains broadly in line with the five-year average of 148 ttds.

Dried solid mass disposed.

The amount of sewage sludge reported to be disposed has increased since last year. This is two-fold: 1) we were carrying high raw cake stocks on our pads at the beginning of the reporting period, which have now been recycled. 2) In 2017-2018 we were temporarily prevented from recycling green Treated Conditioned Sewage Sludge (TCSS), so that year's figure is lower than it would otherwise have been. Most of the green TCSS was the recycling in 2018/2019, contributing to the increased figure for this year.

The amount of sludge recycling/disposed varies significantly from year to year, depending on weather conditions, customer uptake and other external factors. Therefore, this fluctuation in reported amounts from the previous year is not uncommon.

Connected population

The number of new (2018/2019) household properties in the Yorkshire Water waste water area is 13,994 which when multiplied by the 2.40 occupancy rate gives a population increase of 33,465 representing an increase of 0.65% which is very similar to that of previous years (0.63% in 2018 and 0.6% in 2017).

Table 4F: Cost analysis – household retail

For the 12 months ended 31 March 2019

Line description		Units	DPs	Household unmeasured			
				Water only	Wastewater only	Water and wastewater	Total
A - Operating expenditure							
4F.1	Customer services	£m	3	0.443	0.474	9.063	9.980
4F.2	Debt management	£m	3	0.095	0.102	1.947	2.144
4F.3	Doubtful debts	£m	3	0.436	0.466	8.921	9.823
4F.4	Meter reading	£m	3				
4F.5	Other operating expenditure	£m	3	0.180	0.192	3.680	4.052
4F.6	Total operating expenditure excluding third party services	£m	3	1.154	1.234	23.611	25.999
4F.7	Third party services operating expenditure	£m	3	0.000	0.000	0.000	0.000
4F.8	Total operating expenditure	£m	3	1.154	1.234	23.611	25.999
4F.9	Depreciation - tangible fixed assets (on assets existing at 31 March 2015)	£m	3	0.017	0.018	0.346	0.381
4F.10	Depreciation - tangible fixed assets (on assets acquired since 1 April 2015)	£m	3	0.024	0.026	0.493	0.543
4F.11	Amortisation - intangible fixed assets (on assets existing at 31 March 2015)	£m	3	0.000	0.000	0.000	0.000
4F.12	Amortisation - intangible fixed assets (on assets acquired since 1 April 2015)	£m	3	0.000	0.000	0.000	0.000
4F.13	Total operating costs	£m	3	1.195	1.278	24.450	26.923
4F.14	Capital expenditure	£m	3	0.054	0.058	1.103	1.215
B - Demand-side efficiency and customer-side leaks analysis - Household							
4F.15	Demand-side water efficiency - gross expenditure	£m	3				
4F.16	Demand-side water efficiency - expenditure funded by wholesale	£m	3				
4F.17	Demand-side water efficiency - net retail expenditure	£m	3				
4F.18	Customer-side leak repairs - gross expenditure	£m	3				
4F.19	Customer-side leak repairs - expenditure funded by wholesale	£m	3				
4F.20	Customer-side leak repairs - net retail expenditure	£m	3				

Key

Input cell Calculation cell

Please refer to RAG 4.08 - Guideline for the table definitions in the annual performance report for the reporting year 2018-2019

Household measured				Total
Water only	Wastewater only	Water and wastewater	Total	
0.423	0.419	11.010	11.852	21.832
0.091	0.090	2.365	2.546	4.690
0.416	0.413	10.837	11.666	21.489
0.075	0.074	1.946	2.095	2.095
0.172	0.170	4.470	4.812	8.864
1.177	1.166	30.628	32.971	58.970
0.000	0.000	0.000	0.000	0.000
1.177	1.166	30.628	32.971	58.970
0.016	0.016	0.420	0.452	0.833
0.023	0.023	0.599	0.645	1.188
0.000	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000
1.216	1.205	31.647	34.068	60.991
0.051	0.051	1.339	1.441	2.656
				0.344
				0.344
				0.000
				5.554
				5.533
				0.021

Household retail operating costs in 2018/2019 have increased to £61m from £57.9m in the prior year. Key movements from prior year include the following:

- Customer services has increased by £2.4m from £19.4m in 2017/2018 to £21.8m in 2018/2019. This is due to the increase in customer contacts due to the exceptional weather and also specific initiatives to engage with vulnerable customers
- Increase in doubtful debts of £1.9m from £19.6m in 2017/2018 to £21.5m, due to the implementation of Universal Credit, which has been introduced by the Government to replace the previous benefits system through the Department for Work and Pensions. This has caused a decrease in the number of customers that are supported to manage their bill payments through the Water Direct scheme
- The ongoing implementation of the webchat facility, Drive to Digital, has incurred further costs.

Table 4G: Wholesale current cost financial performance

For the 12 months ended 31 March 2019

Line description		Units	DPs	Water	Wastewater	TTT	Total
4G.1	Revenue	£m	3	441.149	533.975	0.000	975.124
4G.2	Operating expenditure	£m	3	-258.455	-203.253	0.000	-461.708
4G.3	Capital maintenance charges	£m	3	-91.855	-167.673	0.000	-259.528
4G.4	Other operating income	£m	3	0.316	2.558	0.000	2.874
4G.5	Current cost operating profit	£m	3	91.155	165.607	0.000	256.762
4G.6	Other income	£m	3	7.526	7.939	0.000	15.465
4G.7	Interest income	£m	3	48.100	66.772	0.000	114.872
4G.8	Interest expense	£m	3	-112.091	-155.606	0.000	-267.697
4G.9	Other interest expense	£m	3	0.000	0.000	0.000	0.000
4G.10	Current cost profit before tax and fair value movements	£m	3	34.690	84.712	0.000	119.402
4G.11	Fair value gains/(losses) on financial instruments	£m	3	-103.519	-143.707	0.000	-247.226
4G.12	Current cost profit before tax	£m	3	-68.829	-58.995	0.000	-127.824

Key

Input cell
 Calculation cell
 Copy cell

Please refer to RAG 4.08 - Guideline for the table definitions in the annual performance report for the reporting year 2018-2019

Table 4G looks at the financial performance of the Company in current costs terms. Current cost operating profit for the year is £256.8m compared to £303.5m in 2017/2018.

Technical notes

The key difference between current cost accounting and standard or historical cost accounting, is the revaluation of assets to 'money of the day' prices. Current cost accounting restates the value of assets each year, typically by the rate of inflation. This particularly impacts capital maintenance (depreciation) charges which tend to be higher in current cost accounting.

Whilst the year on year movements for revenue and net interest expense are minimal, there have been some significant movements within operating expenditure and other income. These relate to the ongoing additional operating costs relating to the severe flooding in 2015, which further reduced during 2018/2019.

The loss on fair value of financial instruments for the year ended 31 March 2019 was £247.2m (2017/2018: £41.5m gain). The variance has been primarily driven by adverse movements in the underlying mark to market values, and is also impacted by the change in presentation of the RPI uplift on the swaps, as explained in commentary for Table 1A. Further details on these instruments are contained in the ARFS and in the table 4I technical note.



Table 4H: Financial metrics

For the 12 months ended 31 March 2019

Line description		Units	DPs	Current year	AMP to date
A - Financial indicators					
4H.1	Net debt	£m	3	5065.312	
4H.2	Regulated equity	£m	3	1621.241	
4H.3	Regulated gearing	%	2	75.75%	
4H.4	Post tax return on regulated equity	%	2	3.78%	
4H.5	RORE (return on regulated equity)	%	2	6.16%	5.02%
4H.6	Dividend yield	%	2	2.03%	
4H.7	Retail profit margin - Household	%	2	0.46%	
4H.8	Retail profit margin - Non-household	%	2	-2.27%	
4H.9	Credit rating	Text	n/a	Baa2 (negative outlook)	
4H.10	Return on RCV	%	2	3.25%	
4H.11	Dividend cover	dec	2	-4.42	
4H.12	Funds from operations (FFO)	£m	3	405.176	
4H.13	Interest cover (cash)	dec	2	3.39	
4H.14	Adjusted interest cover (cash)	dec	2	1.89	
4H.15	FFO/Debt	dec	2	0.08	
4H.16	Effective tax rate	%	2	20.35%	
4H.17	RCF	£m	3	325.680	
4H.18	RCF/capex	dec	2	0.59	
B - Revenue and earnings					
4H.19	Revenue (actual)	£m	3	1047.148	
4H.20	EBITDA (actual)	£m	3	512.177	
C - Movement in RORE					
4H.21	Base return	%	2	5.65%	5.65%
4H.22	Totex out/(under) performance	%	2	-0.40%	-0.10%
4H.23	Retail cost out/(under) performance	%	2	-0.49%	-0.29%
4H.24	ODI out/(under) performance	%	2	0.33%	0.35%
4H.25	Financing out/(under) performance	%	2	1.07%	-0.59%
4H.26	Other factors	%	2	0.00%	0.00%
4H.27	Regulatory return for the year	%	2	6.16%	5.02%

Line description		Units	DPs	Current year	AMP to date
C - Borrowings					
4H.28	Proportion of borrowings which are fixed rate	%	2	39.99%	
4H.29	Proportion of borrowings which are floating rate	%	2	26.19%	
4H.30	Proportion of borrowings which are index linked	%	2	33.82%	
4H.31	Proportion of borrowings due within 1 year or less	%	2	5.83%	
4H.32	Proportion of borrowings due in more than 1 year but no more than 2 years	%	2	0.92%	
4H.33	Proportion of borrowings due in more than 2 years but no more than 5 years	%	2	23.27%	
4H.34	Proportion of borrowings due in more than 5 years but no more than 20 years	%	2	41.86%	
4H.35	Proportion of borrowings due in more than 20 years	%	2	28.12%	

Key

 Input cell  Calculation cell

Please refer to RAG 4.08 - Guideline for the table definitions in the annual performance report for the reporting year 2018-2019

Table 4H Line 5. RORE (return on regulated equity)

4H.5 is equal to line 4H.27. The explanation as to how 4H.27 has been calculated is contained within lines 4H.21 to 4H.26.

Table 4H Line 9. Credit Rating

Yorkshire Water Services Limited and its financing subsidiaries have credit ratings assigned to their issued debt by three rating agencies, Fitch Ratings ("Fitch"), Moody's Investors Services ("Moody's") and S&P Global ratings ("S&P").

Yorkshire Water Services Limited and its financing subsidiaries have two types of debt: 'class A' debt and 'class B' debt (the main difference between the two is that the class A debt is senior to class B debt and therefore takes payment priority). Fitch, Moody's and S&P periodically confirm and/or re-rate Yorkshire Water Services Limited and its financing subsidiaries class A debt and class B debt credit ratings in the form of published notices.

Rating agencies also provide a credit rating 'outlook' status to their assigned ratings. A credit rating outlook is an opinion regarding the likely direction of a credit rating over the medium term (typically six months to two years). A positive outlook means that a credit rating may be raised, a negative outlook means that a rating may be lowered and a stable outlook means that a rating is not likely to change over the medium term.

In addition to assigning a credit rating to Yorkshire Water Services Limited and its financing subsidiaries issued class A and class B debt, Moody's also assign a 'corporate family rating' for Yorkshire Water Services Limited. Moody's corporate family rating is assigned to a corporate family as if it had a single class of debt and was a single consolidated legal entity (Fitch and S&P do not publish the equivalent of a corporate family rating). It should be noted that Moody's corporate family rating does not represent Moody's credit rating of a company's issued debt. It is however an opinion of a corporate family's ability to honour its financial obligation.

The Ofwat definition for table 4H, line 9 – credit rating, is as follows:

- Credit rating (corporate family where available) issued by a recognised credit rating agency. This should be the credit rating that is linked to each company’s licence where applicable. If companies are rated by more than one credit rating agency, then only the lowest rating needs to be included.
- Companies should also provide details of the “outlook/watch” status of the rating.

Therefore, in accordance with Ofwat’s reporting requirements, the input to table 4H, line 9 is Moody’s corporate family rating for Yorkshire Water Service Limited.

The latest published ratings for Yorkshire Water Services Limited and its financing subsidiaries are shown in the table below (outlook status shown in brackets):

Rating Agency	Class A debt rating	Class B debt rating	Corporate family rating	Latest publication
Fitch	A (negative)	BBB+ (negative)	N/A	February 2019
Moody’s	Baa1 (negative)	Ba1 (negative)	Baa2 (negative)	February 2019
S&P	A- (stable)	BBB (stable)	N/A	September 2018

Table 4H Line 11. Dividend cover

The dividend cover ratio is negative due to the loss made in the year (2017/2018: profit). The dividend has been paid to cover costs relating to the entity that have been incurred elsewhere in the group. This was a legal distribution as sufficient distributable reserves were available.

Table 4H Line 13. Interest cover (cash)

The interest cover ratios in lines 13 and 14 illustrate Yorkshire Water’s ability to pay the interest due on the company’s outstanding debt.

This is the formula we have used to calculate the interest cover (cash) in table 4H line 13 is as follows:

$$\text{Interest Cover (cash)} = \frac{\text{Funds from operations (table 4H line 12) plus interest paid on borrowings}}{\text{Interest paid on borrowings}}$$

Interest paid on borrowings is made up of the following:

	£m
Yorkshire Water Net Interest Paid (Table 1D Line 10 of the APR).	£113.4
Add back interest received on subordinated inter-company loans (see note 7 of Yorkshire Water Services Ltd annual report and financial statement for the year ended 31 March 2019). www.yorkshirewater.com/reports	£50.4
Add loan repayment from Yorkshire Water to fund interest payments on exchange bonds held by subsidiary companies to pay the interest on bonds raised by those subsidiary companies (see note 8 of Yorkshire Water Services Ltd annual report and financial statement for the year ended 31 March 2019). www.yorkshirewater.com/reports	£6.0
Interest Paid on Borrowings	£169.8

Therefore, the calculation for line 13: Interest cover (cash) is as follows:

$$\text{Interest Cover (cash)} = \frac{£405.2\text{m} + £169.8\text{m}}{£169.8\text{m}} = 3.39 \text{ times.}$$

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

This is the formula we have used to calculate the adjusted interest cover (cash) in table 4H line 14 is as follows:

$$\text{Adjusted interest Cover (cash)} = \frac{\text{Funds from operations (table 4H line 12) plus interest paid on borrowings less regulatory depreciation}}{\text{Interest paid on borrowings}}$$

Interest paid on borrowings is as per line 13 - Interest cover (cash). Regulatory depreciation is defined within Yorkshire Water's final determination and is adjusted to the year end price base. The regulatory depreciation figures are published by Ofwat each year.

Therefore, the calculation for line 14: Adjusted interest cover (cash) is as follows:

$$\text{Adjusted Interest Cover (cash)} = \frac{\text{£405.2m} + \text{£169.8m} - \text{£254.7m}}{\text{£169.8m}} = 1.89 \text{ times.}$$

Table 4H Lines 21-27.

This is the formula we have used to calculate:

	Description	2018/2019 %	2018/2019 £m	Cumulative %	Cumulative £m
4H.21	Base return	5.65%	121	5.65%	471
4H.22	Totex out/ (under) performance	(0.40%)	(8)	(0.10%)	(9)
4H.23	Retail cost out/ (under) performance	(0.49%)	(10)	(0.29%)	(25)
4H.24	ODI out/ (under) performance	0.33%	7	0.35%	29
4H.25	Financing out/ (under) performance	1.07%	23	(0.59%)	(49)
4H.26	Other factors	0.00%	0	0.00%	0
4H.27	Regulatory return for the year	6.16%	132	5.02%	418

The RORE calculation is based on the cumulative position at the end of 2018/2019.

This is based on an average RCV figure of £22,244m at 2012/2013 average prices. A notional gearing of 62.5% has been used.

The base return for the 4 years has been calculated using the 5.65% equity return as included within the PR14 final determination.

All values have been included post tax.

The adjustments are explained below:

Table 4H Line 22. Totex outperformance

We have included a cumulative under performance against totex of £9m at 2012-2013 average prices.

This has been calculated assuming there is a cumulative £78m timing variance and the FD14 sharing mechanism has been applied.

Table 4H Line 23. Retail underperformance

We have included a cumulative underperformance against PR14 of (£25m) at 2012-2013 average prices.

This has been calculated by comparing the actual retail costs reported in table 2C to the operating cost allowances included within the PR14 final determination.

Table 4H Line 24. ODI reward

We have included a cumulative ODI reward of £29m at 2012-2013 average prices.

The explanation of how this has been calculated within section 4.

Table 4H Line 25. Financing impact

We have included a cumulative financing impact of (£49m) at 2012-2013 average prices.

This has been calculated by assuming a gearing of 62.5% against the average RCV.

The nominal cost of debt has been taken from Table 1E, line 9 for all four years. This has been adjusted by the average RPI for all years using the Fisher formula.

This calculation provides a real cost of debt for 2015/2016 of 4.46%, 4.13% for 2016/2017, 1.85% for 2017/2018 and 1.80% for 2018/2019 against the 2.59% cost of debt as included within the PR14 final determination.

Table 4H Line 26. Other factors

We currently have no values calculated under this section.

Table 4H Line 27. Regulatory return for the year

This is a sum of lines 4H.21 to 4H.26 and is equal to line 4H.5

Table 4H Lines 27-34. Proportion of borrowings due

Yorkshire Water's debt maturity profile reflects the company's effective management of its refinancing requirements and Yorkshire Water has a balanced mix of funding at fixed, floating and inflation linked interest rates. The proportion of borrowings split between fixed, floating and inflation linked interest rates remains broadly in line with the amounts disclosed in last year's annual performance report.

Yorkshire Water measures its debt percentages against the company's regulated capital value to ensure that no more than 20 per cent of the company's refinancing requirements fall due within any 24 month period and that no more than 40 per cent falls due within any AMP.

The proportion of borrowings due within 1 year or less is 5.83% (2017/2018: 1.22%) which reflects the maturity of a £275m fixed rate bond repayable in August 2019. Other movements to the proportion of borrowings due reflects both debt that has matured and addition debt raised during the 2018/2019 financial year.

Table 4I: Financial derivatives

For the 12 months ended 31 March 2019

Line description		Units	DPs	Nominal value by maturity (net)		
				1 to 2 years	2 to 5 years	Over 5 years
Derivative type						
A - Interest rate swap (sterling)						
4I.1	Floating to fixed rate	£m	3	0.000	0.000	45.000
4I.2	Floating from fixed rate	£m	3	0.000	0.000	430.000
4I.3	Floating to index linked	£m	3	0.000	0.000	0.000
4I.4	Floating from index linked	£m	3	0.000	151.523	1137.477
4I.5	Fixed to index-linked	£m	3	0.000	0.000	0.000
4I.6	Fixed from index-linked	£m	3	0.000	0.000	0.000
4I.7	Total	£m	3	0.000	151.523	1612.477
B - Foreign Exchange						
4I.8	Cross currency swap USD	£m	3	0.000	257.670	0.000
4I.9	Cross currency swap EUR	£m	3	0.000	0.000	0.000
4I.10	Cross currency swap YEN	£m	3	0.000	0.000	0.000
4I.11	Cross currency swap Other	£m	3	0.000	33.800	0.000
4I.12	Total	£m	3	0.000	291.470	0.000
C - Currency interest rate						
4I.13	Currency interest rate swaps USD	£m	3	0.000	0.000	0.000
4I.14	Currency interest rate swaps EUR	£m	3	0.000	0.000	0.000
4I.15	Currency interest rate swaps YEN	£m	3	0.000	0.000	0.000
4I.16	Currency interest rate swaps Other	£m	3	0.000	0.000	0.000
4I.17	Total	£m	3	0.000	0.000	0.000
D - Forward currency contracts						
4I.18	Forward currency contracts USD	£m	3	0.000	0.000	0.000
4I.19	Forward currency contracts EUR	£m	3	0.000	0.000	0.000
4I.20	Forward currency contracts YEN	£m	3	0.000	0.000	0.000
4I.21	Forward currency contracts CAD	£m	3	0.000	0.000	0.000
4I.22	Forward currency contracts AUD	£m	3	0.000	0.000	0.000
4I.23	Forward currency contracts HKD	£m	3	0.000	0.000	0.000
4I.24	Forward currency contracts Other	£m	3	0.000	0.000	0.000
4I.25	Total	£m	3	0.000	0.000	0.000
E - Other financial derivatives						
4I.23	Other financial derivatives	£m	3	0.000	0.000	0.000
F - Total						
4I.24	Total financial derivatives	£m	3	0.000	442.993	1612.477

Total value at 31 March 2019		Total accretion at 31 March 2019	Units	DPs	Interest rate (weighted average for 12 months to 31 March 2019)	
Nominal value (net)	Mark to Market				Payable	Receivable
45.000	-25.194	0.000	%	2	6.03%	0.00%
430.000	58.206	0.000	%	2	1.42%	0.00%
0.000	0.000	0.000	%	2	0.00%	0.00%
1289.000	-2661.929	127.306	%	2	2.91%	6.94%
0.000	0.000	0.000	%	2	0.00%	0.00%
0.000	0.000	0.000	%	2	0.00%	0.00%
1764.000	-2628.917	127.306				
257.670	59.780	0.000	%	2	1.72%	0.00%
0.000	0.000	0.000	%	2	0.00%	0.00%
0.000	0.000	0.000	%	2	0.00%	0.00%
33.800	-4.190	0.000	%	2	1.45%	0.00%
291.470	55.590	0.000				
0.000	0.000	0.000	%	2	0.00%	0.00%
0.000	0.000	0.000	%	2	0.00%	0.00%
0.000	0.000	0.000	%	2	0.00%	0.00%
0.000	0.000	0.000	%	2	0.00%	0.00%
0.000	0.000	0.000				
0.000	0.000	0.000	%	2	0.00%	0.00%
0.000	0.000	0.000	%	2	0.00%	0.00%
0.000	0.000	0.000	%	2	0.00%	0.00%
0.000	0.000	0.000	%	2	0.00%	0.00%
0.000	0.000	0.000	%	2	0.00%	0.00%
0.000	0.000	0.000	%	2	0.00%	0.00%
0.000	0.000	0.000	%	2	0.00%	0.00%
0.000	0.000	0.000				
0.000	3.810	0.000	%	2	0.00%	0.00%
2055.470	-2569.517	127.306				

Key

Input cell Calculation cell

Please refer to RAG 4.08 - Guideline for the table definitions in the annual performance report for the reporting year 2018-2019

Table 4I provides an analysis of Yorkshire Water's portfolio of financial derivatives.

Yorkshire Water's operations expose the company to a variety of financial risks that include, amongst other things, the effects of changes in debt and loan market prices, liquidity, interest rates, exchange rates and inflation (especially periods of deflation). Yorkshire Water has a number of financial derivatives, including cross currency swaps, interest rate swaps and forward currency contracts are to manage the interest rate and currency risk arising from the debt instruments that are used to finance the company's activities (including funding Yorkshire Water's long-term capital investment programme). In relation to inflation risk, Yorkshire Water's revenues are closely linked to the underlying rate of inflation, currently measured by the Retail Price Index (RPI) and therefore fluctuate with changes in the rate of inflation. In addition, Yorkshire Water's regulatory capital value (RCV), which is one of the critical components for setting customer's bills, is also linked to RPI. As the percentage of the company's net debt to RCV is a key gearing covenanted ratio within Yorkshire Water's financing arrangements with its lenders, in the absence of any management action, deflation could potentially lead to a breach of the company's covenanted gearing limits, despite Yorkshire Water being profitable. This risk is mitigated by Yorkshire Water maintaining levels of debt linked to inflation and also being a counterparty to a portfolio of inflation linked swaps.

For Yorkshire Water's inflation linked debt interest is paid at fixed amounts plus RPI. Movements in RPI are also applied to the debt by increasing the amount to be repaid at maturity. Therefore, the impact of RPI reductions on income and RCV is partially mitigated by reduced interest charges and lower value of inflation linked debt used in calculating covenanted gearing levels. As with the company's inflation linked debt, Yorkshire Water's portfolio of inflation linked (floating from index linked) swaps, which in total have a notional value of £1,289.0m, help to mitigate the impact of RPI reductions on income and RCV by both reducing interest charges and lowering the value of inflation linked debt used in calculating covenanted gearing levels.

Table 4I Line 1. Floating to fixed rate interest rate swaps

In relation to managing interest rate risk Yorkshire Water holds £45.0m (2018: £45.0m) notional value of floating to fixed rate swaps.

Table 4I Line 2. Floating to fixed rate interest rate swaps

Also, in relation to managing interest rate risk, Yorkshire Water holds £430.0m (2018: £430.0m) notional value of floating from fixed rate swaps.

Table 4I Line 4. Floating from index linked swaps

In relation to managing inflation risk, Yorkshire Water holds £1,289.0m (2018: £1,289.0m) notional value of floating from index linked swaps (termed inflation linked swaps). Yorkshire Water's inflation linked swaps have the following cashflows:

- Six monthly interest is received by Yorkshire Water based on the London Interbank Offered Rate (LIBOR).
- Six monthly interest is paid by Yorkshire Water based at a fixed rate plus RPI.
- An RPI linked amount is also payable on maturity of the swaps or at certain predetermined dates over the duration of the swaps.
- A proportion of the swaps also receives six monthly interest amounts based on a fixed rate.

The maturity dates of the company's portfolio of inflation linked swaps ranges from 2026 to 2063. As at 31 March 2019 swaps with a notional value of £292.5m include mandatory break clauses in their terms which reduced the associated credit charges from bank counterparties at the time that the swaps were

established. The break dates are 21 February 2023 (£151.5m), 21 February 2025 (£23.4m) and 21 February 2030 (£117.5m).

In July 2018, Yorkshire Water completed a transaction to restructure inflation linked swaps with a notional value of £374.1 million. The terms of swaps were amended to extend the mandatory breaks, due in February 2020, by ten and a half years for swaps with a notional value of £117.5 million and to increase interest receivable by £10 million for two years, £5 million received semi-annually from August 2018, and to reduce net interest by £21.1 million for ten years, with £10.6 million received on a net of funding basis semi-annually from August 2020. This transaction also included a voluntary repayment of £129.7m in November 2018 in relation to the accretion element accrued to date on the above £374.1m of swaps.

In March 2019, Yorkshire Water completed an inflation swap transaction with a notional value of £225.5 million, which results in a bespoke RPI floor from Yorkshire Water to its bank counterparty for the period from 2021 to 2048. The terms of this swap match those of an existing swap with the same counterparty, thereby allowing both parties to reduce their counterparty exposures.

Table 4I Line 8. Cross currency swaps USD

In relation to managing currency risk, Yorkshire Water hedges the fair value of issued US dollar bonds using a series of combined interest rate and foreign currency swaps, swapping US dollar principal repayments into sterling and fixed rate US dollar interest payments into floating rate sterling interest payments.

Table 4I Line 11. Cross currency swaps other

Yorkshire Water also hedges the fair value of an Australian dollar bond using a combined interest rate and foreign currency swap, swapping Australian dollar principal repayments into sterling and fixed rate Australian dollar interest payments into floating rate sterling interest payments.

Table 4I Line 26. Other financial derivatives

Other financial derivatives relate to Yorkshire Water's exposure to energy prices fluctuations. Yorkshire Water aims to manage this risk by fixing energy contract prices where possible and operating within an energy purchasing policy that is designed to manage price volatility risk. Currently, wholesale energy costs are fixed until 2020 due to action taken in 2015/2016 and steps have been taken to start to fix costs in AMP7 with new forward contracts and hedge transactions for 2020/2021. The notional amounts of energy that Yorkshire Water has hedged is in megawatts per hour (i.e. not in £m's) and therefore the nominal value by maturity has been left blank in line 4I.26.

Data validation

Within the statement of financial position at table 1C, in accordance with generally accepted accounting principles, financial derivatives are stated at fair value rather than the mark to market value. The fair value of a swap is essentially the mark to market value of the swap adjusted to take into account the potential impact of the risks the swap counterparties defaulting (the counterparties being Yorkshire Water and the bank or financial institution providing the swap) as well as a number of other valuation adjustments.

Table 4I requests information on swap mark to market values rather than swap fair values. There is a data validation error on table 4I, line 24, the table below reconciles the mark to market values shown in table 4I to the fair value amounts shown within table 1C, the latter being reflected within Yorkshire Water's published financial statements.

Table 4I to table 1C reconciliation

Derivative type	Table 4I - mark to market values £m	Valuation adjustment to reflect the day 1 loss/gain on exchange transaction on exchanged swaps in line with IFRS accounting £m	Cash received as part of the inflation swap transaction completed March 2019* £m	Credit risk and other adjustments required under FRS102 accounting £m	Table 1C £m
Floating to fixed rate	(25.194)			2.0	(23.2)
Floating from fixed rate	58.206			(2.8)	55.4
Floating from index linked	(2,661.929)	59.2	(8.0)	543.2	(2,067.5)
Cross currency swap USD	59.780			(1.3)	58.5
Cross currency swap Other	(4.190)			0.2	(4.0)
Financial instrument on energy contracts	3.180			(0.0)	3.9
Total	(2,569.5)	59.2	(8.0)	541.3	(1,976.9)

*See above paragraph 4I.4 - Floating from index linked swaps.

Table 1C	£m
Non-current assets: Financial instruments	117.8
Non-Current liabilities: Financial instruments	(2,094.7)
Total	(1,976.9)

Technical notes

Nominal value

The Nominal value (referred to as “notional value” in the context of inflation linked swaps) is the face amount that is used to calculate all payments made and received under the associated swap.

Mark to market value

The mark to market value is essentially the net present value of all future expected receipts and payments under a swap. The amount is based on the current market expectations of future interest rates, future inflation rates and future exchange rates depending on the swap in question.

Cost assessment tables

Tables 4J to 4W of the APR contain information on the allocation of expenditure to different investment categories. It also contains information on the drivers of expenditure, such as population served or asset capacities. This information and comparable information published by other water companies can be used by Ofwat, or others, to support the development of cost models. These tables are known as the cost assessment tables. The information in this section comprises the following tables.

- Table 4J: Atypical expenditure on wholesale water
- Table 4K: Atypical expenditure on wholesale wastewater
- Table 4L: Enhancement capital expenditure on wholesale water
- Table 4M: Enhancement capital expenditure on wholesale wastewater
- Table 4N: Sewage treatment – functional expenditure
- Table 4O: Wholesale wastewater service – large sewage treatment works
- Table 4P: Non-financial data for WR, WT and WD – wholesale water.
- Table 4Q: Non-financial data – properties, population and other – wholesale water
- Table 4R: Non-financial data – wastewater network and sludge – wholesale wastewater.
- Table 4S: Non-financial data – sewage treatment – wholesale wastewater.
- Table 4T: Non-financial data – sludge treatment – wholesale wastewater.
- Table 4U: Non-financial data – properties, population and other.
- Table 4V: Operating costs analysis - water resources.
- Table 4W: Operating cost analysis - sludge treatment.

Where further explanation of specific information is required, technical notes are included as appropriate.

Table 4J: Atypical expenditure by business unit – wholesale water

For the 12 months ended 31 March 2019

Line description		Units	DPs	Water resources	
				Abstraction licences	Raw water abstraction
A - Operating expenditure (excluding atypicals)					
4J.1	Power	£m	3	0.000	1.725
4J.2	Income treated as negative expenditure	£m	3	0.000	0.000
4J.3	Abstraction charges/discharge consents	£m	3	4.972	0.605
4J.4	Bulk supply	£m	3	0.000	3.867
Other operating expenditure					
4J.5	- Renewals expensed in year (Infrastructure)	£m	3	0.000	0.000
4J.6	- Renewals expensed in year (Non-Infrastructure)	£m	3	0.000	0.000
4J.7	- Other operating expenditure excluding renewals	£m	3	0.189	9.605
4J.8	Local authority and Cumulo rates	£m	3	0.000	7.401
4J.9	Total operating expenditure (excluding third party services)	£m	3	5.161	23.203
4J.10	Third party services	£m	3	0.000	0.000
4J.11	Total operating expenditure	£m	3	5.161	23.203
B - Capital expenditure (excluding atypicals)					
4J.12	Maintaining the long term capability of the assets - infra	£m	3	0.000	11.590
4J.13	Maintaining the long term capability of the assets - non-infra	£m	3	0.000	1.584
4J.14	Other capital expenditure - infra	£m	3	0.000	1.405
4J.15	Other capital expenditure - non-infra	£m	3	0.000	4.005
4J.16	Infrastructure network reinforcement	£m	3	0.000	0.000
4J.17	Total gross capital expenditure excluding third party services	£m	3	0.000	18.584
4J.18	Third party services	£m	3	0.000	0.000
4J.19	Total gross capital expenditure	£m	3	0.000	18.584
4J.20	Grants and contributions	£m	3	0.000	0.185
4J.21	Totex	£m	3	5.161	41.602
C - Cash expenditure (excluding atypicals)					
4J.22	Pension deficit recovery payments	£m	3	0.000	0.000
4J.23	Other cash items	£m	3	0.000	0.000
4J.24	Totex including cash items	£m	3	5.161	41.602
D - Atypical expenditure					
4J.25	Flooding - Capex	£m	3	0.000	0.000
4J.26	Dry Weather - Opex	£m	3	0.000	0.602
4J.27	Flooding - Opex (IAS16)	£m	3	0.000	0.174
4J.28	Item 4	£m	3		
4J.29	Item 5	£m	3		
4J.30	Item 6	£m	3		
4J.31	Item 7	£m	3		
4J.32	Item 8	£m	3		

Network+				Total
Raw water transport	Raw water storage	Water treatment	Treated water distribution	

4.620	0.001	8.687	12.763	27.796
0.000	0.000	-0.342	-0.024	-0.366
0.000	0.000	0.073	0.004	5.654
0.000	0.000	0.007	0.016	3.890

0.000	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000
2.932	1.366	40.624	100.274	154.990
1.853	0.645	1.058	27.062	38.019
9.405	2.012	50.107	140.095	229.983

0.000	0.000	0.000	2.828	2.828
9.405	2.012	50.107	142.923	232.811

0.061	0.067	0.000	34.376	46.094
1.239	0.350	45.039	30.406	78.618
0.000	0.000	0.000	30.580	31.985
0.015	0.012	17.730	17.582	39.344
0.000	0.000	0.000	1.614	1.614
1.315	0.429	62.769	114.558	197.655
0.000	0.000	0.000	0.000	0.000
1.315	0.429	62.769	114.558	197.655
0.000	0.000	0.074	16.697	16.956
10.720	2.441	112.802	240.784	413.510

0.000	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000
10.720	2.441	112.802	240.784	413.510

0.000	0.000	0.000	0.000	0.000
1.041	0.000	5.122	18.705	25.470
0.000	0.000	0.000	0.000	0.174
				0.000
				0.000
				0.000
				0.000
				0.000

Table 4J: Atypical expenditure by business unit – wholesale water (continued)

For the 12 months ended 31 March 2019

Line description		Units	DPs	Water resources	
				Abstraction licences	Raw water abstraction
D - Atypical expenditure					
4J.33	Item 9	£m	3		
4J.34	Item 10	£m	3		
4J.35	Total atypical expenditure	£m	3	0.000	0.776
E - Total expenditure					
4J.36	Total expenditure	£m	3	5.161	42.378

Key

 Input cell  Calculation cell

Please refer to RAG 4.08 - Guideline for the table definitions in the annual performance report for the reporting year 2018-2019

Operating expenditure

Table 4J is similar to table 4D, with the only difference being that the atypical expenditure has been separately split out from operating costs to allow a review of ongoing operating costs. For more information on this table please see the commentary for 4D.

Gross operating expenditure excludes atypical expenditure associated with wholesale water activities. The £25.5m exclusion relates to costs incurred due to the extreme change in weather we experienced through the year:

- The 'Beast from the East' (24 Feb 2018 – 4 March 2018) winter event caused an increase in burst pipes (and consequently leakage) which required further expenditure. This was compounded by the 2018 drought where the dry weather caused dry soil to move and increase the number of burst pipes. Additional leakage inspectors were recruited to identify leaking pipes and additional repair and maintenance teams were recruited to fix them.
- There were also increased costs within Water Production as customer demand increased, and more treated water was pumped around the region to ensure that water resources could be maintained in the event of a continued drought.

The total of table 4J aligns to the operating costs section in table 4D.

Capital expenditure

Gross regulated capital expenditure associated with the Wholesale Water (WW) programme excluding atypical expenditure in the current reporting year was £197.7m. With the associated income totalling £17.0m the net expenditure in the current reporting year excluding atypical expenditure was £180.7m.

Atypical capital expenditure in previous years has related to the Flooding recovery programme, this year there is nil to report in relation to the water programme.

Network+				Total
Raw water transport	Raw water storage	Water treatment	Treated water distribution	

				0.000
				0.000
1.041	0.000	5.122	18.705	25.644

11.761	2.441	117.924	259.489	439.154
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Table 4K: Atypical expenditure by business unit – wholesale wastewater

For the 12 months ended 31 March 2019

Line description		Units	DPs	Network+ Sewage Collection		
				Foul	Surface water drainage	Highway drainage
A - Operating expenditure (excluding atypicals)						
4K.1	Power	£m	3	2.086	1.281	0.495
4K.2	Income treated as negative expenditure	£m	3	0.000	0.000	0.000
4K.3	Discharge Consents	£m	3	0.966	1.065	0.446
4K.4	Bulk discharge	£m	3	0.000	0.000	0.000
	Other operating expenditure					
4K.5	- Renewals expensed in year (Infrastructure)	£m	3	0.000	0.000	0.000
4K.6	- Renewals expensed in year (Non-Infrastructure)	£m	3	0.000	0.000	0.000
4K.7	- Other operating expenditure excluding renewals	£m	3	24.139	23.344	12.500
4K.8	Local authority and Cumulo rates	£m	3	0.064	0.057	0.038
4K.9	Total operating expenditure (excluding third party services)	£m	3	27.255	25.747	13.479
4K.10	Third party services	£m	3	0.000	0.000	0.000
4K.11	Total operating expenditure	£m	3	27.255	25.747	13.479
B - Capital expenditure (excluding atypicals)						
4K.12	Maintaining the long term capability of the assets - infra	£m	3	14.574	16.068	6.726
4K.13	Maintaining the long term capability of the assets - non-infra	£m	3	7.083	6.724	4.161
4K.14	Other capital expenditure - infra	£m	3	10.058	11.089	4.642
4K.15	Other capital expenditure - non-infra	£m	3	7.676	8.365	3.624
4K.16	Infrastructure network reinforcement	£m	3	0.629	0.694	0.291
4K.17	Total gross capital expenditure excluding third party services	£m	3	40.020	42.940	19.444
4K.18	Third party services	£m	3	0.000	0.000	0.000
4K.19	Total gross capital expenditure	£m	3	40.020	42.940	19.444
4K.20	Grants and contributions	£m	3	3.107	3.426	1.434
4K.21	Totex	£m	3	64.168	65.261	31.489
C - Cash expenditure (excluding atypicals)						
4K.22	Pension deficit recovery payments	£m	3	0.000	0.000	0.000
4K.23	Other cash items	£m	3	0.000	0.000	0.000
4K.24	Totex including cash items	£m	3	64.168	65.261	31.489
D - Atypical expenditure						
4K.25	Flooding (Capex)	£m	3	0.345	0.380	0.159
4K.26	Flooding (Opex)	£m	3	0.000	0.000	0.000
4K.27	Item 3	£m	3			
4K.28	Item 4	£m	3			

Network Plus sewage treatment		Sludge			Total
Sewage treatment and disposal	Sludge liquor treatment	Sludge transport	Sludge treatment	Sludge disposal	
27.699	0.131	0.003	-1.734	0.000	29.961
-0.440	0.000	0.000	-1.733	0.000	-2.173
4.255	0.000	0.000	0.000	0.180	6.912
0.000	0.000	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000	0.000
49.669	0.945	6.758	16.486	8.585	142.426
18.344	0.004	0.014	1.313	0.010	19.844
99.527	1.080	6.775	14.332	8.775	196.970
0.000	0.000	0.000	0.000	0.000	0.000
99.527	1.080	6.775	14.332	8.775	196.970
0.149	0.000	0.000	0.000	0.000	37.517
69.998	0.387	1.483	56.189	0.189	146.214
0.000	0.000	0.000	0.000	0.000	25.789
90.854	0.035	0.135	3.876	0.017	114.582
0.000	0.000	0.000	0.000	0.000	1.614
161.001	0.422	1.618	60.065	0.206	325.716
0.000	0.000	0.000	0.000	0.000	0.000
161.001	0.422	1.618	60.065	0.206	325.716
4.659	0.000	0.000	0.000	0.000	12.626
255.869	1.502	8.393	74.397	8.981	510.060
0.000	0.000	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000	0.000
255.869	1.502	8.393	74.397	8.981	510.060
6.903	0.000	0.000	4.758	0.000	12.545
0.000	0.000	0.000	2.878	3.405	6.283
					0.000
					0.000

Table 4K: Atypical expenditure by business unit – wholesale wastewater (continued)

For the 12 months ended 31 March 2019

Line description		Units	DPs	Network+ Sewage Collection		
				Foul	Surface water drainage	Highway drainage
D - Atypical expenditure						
4K.29	Item 5	£m	3			
4K.30	Item 6	£m	3			
4K.31	Item 7	£m	3			
4K.32	Item 8	£m	3			
4K.33	Item 9	£m	3			
4K.34	Item 10	£m	3			
4K.35	Total atypical expenditure	£m	3	0.345	0.380	0.159
E - Total expenditure						
4K.35	Total expenditure	£m	3	64.513	65.641	31.648

Key

Input cell Calculation cell

Please refer to RAG 4.08 - Guideline for the table definitions in the annual performance report for the reporting year 2018-2019

Network Plus sewage treatment		Sludge			Total
Sewage treatment and disposal	Sludge liquor treatment	Sludge transport	Sludge treatment	Sludge disposal	
					0.000
					0.000
					0.000
					0.000
					0.000
					0.000
6.903	0.000	0.000	7.636	3.405	18.828
262.772	1.502	8.393	82.033	12.386	528.888

Operating expenditure

This table is similar to table 4E, with the only difference being that the atypical expenditure has been split out, for more information on this table please see the commentary for 4E.

Gross operating expenditure excludes atypical expenditure in section A of the wholesale waste water table. This was associated with expenditure associated with the December 2015 floods which impacted waste water assets. The atypical operating expenditure is captured in section E, with the total of these align to the operating costs section in table 4E.

Capital expenditure

Gross regulated capital expenditure associated with the Wholesale Waste Water (WWW) programme in the current reporting year excluding atypical expenditure was in total £325.7m. With the associated income totalling £12.6m the net outturn excluding atypical expenditure in the current reporting year was £313.1m.

Atypical capital expenditure in the year, as with previous years, relates to the Flooding recovery programme and totalled £12.6m in year. Expenditure relates to work undertaken across numerous sites over the year with ~£7.9m accounted for at eight sites (Halifax Copley WwTW, Knarborough WwTW, High Royd WwTW, Dowley Gap STW, Upper Brighouse STW, Deighton STW, Esholt WwTW and Horbury STW).

Table 4L: Enhancement expenditure by purpose – wholesale water

For the 12 months ended 31 March 2019

Line description	Units	DPs	Expenditure in report year							Total
			Water resources		Network +					
			Abstraction licences	Raw water abstraction	Raw water transport	Raw water storage	Water treatment	Treated water distribution		

A - Enhancement expenditure by purpose										
4L.1	NEP - Making ecological improvements at abstractions (Habitats Directive, SSSI, NERC, BAPs)	£m	3	0.000	3.238	0.000	0.000	0.000	0.000	3.238
4L.2	NEP - Eels Regulations (measures at intakes)	£m	3	0.000	1.378	0.000	0.000	0.000	0.000	1.378
4L.3	NEP - Invasive Non Native Species	£m	3	0.000	0.103	0.000	0.000	0.000	0.000	0.103
4L.4	Addressing low pressure	£m	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000
4L.5	Improving taste / odour / colour	£m	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000
4L.6	Meeting lead standards	£m	3	0.000	0.000	0.000	0.000	0.000	0.130	0.130
4L.7	Supply side enhancements to the supply/ demand balance (dry year critical / peak conditions)	£m	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000
4L.8	Supply side enhancements to the supply/ demand balance (dry year annual average conditions)	£m	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000
4L.9	Demand side enhancements to the supply/ demand balance (dry year critical / peak conditions)	£m	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000
4L.10	Demand side enhancements to the supply/ demand balance (dry year annual average conditions)	£m	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Cumulative expenditure on schemes completed in the report year						
Water resources		Network +				Total
Abstraction licences	Raw water abstraction	Raw water transport	Raw water storage	Water treatment	Treated water distribution	
0.000	3.106	0.000	0.000	0.000	0.000	3.106
0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000	0.103	0.103
0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000	0.000	0.000

Table 4L: Enhancement expenditure by purpose – wholesale water (continued)

For the 12 months ended 31 March 2019

Line description	Units	DPs	Expenditure in report year							Total
			Water resources		Network plus					
			Abstraction licences	Raw water abstraction	Raw water transport	Raw water storage	Water treatment	Treated water distribution		

A - Enhancement expenditure by purpose										
4L.11	New developments	£m	3	0.000	0.000	0.000	0.000	0.000	8.404	8.404
4L.12	New connections element of new development (CPs, meters)	£m	3	0.000	0.000	0.000	0.000	0.000	8.632	8.632
4L.13	Investment to address raw water deterioration (THM, nitrates, Crypto, pesticides, others)	£m	3	0.000	0.458	0.000	0.000	17.489	0.000	17.947
4L.14	Resilience	£m	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000
4L.15	SEMD	£m	3	0.000	0.044	0.015	0.012	0.240	0.674	0.985
4L.16	NEP - Drinking Water Protected Areas (schemes)	£m	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000
4L.17	NEP - Water Framework Directive Measure	£m	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000
4L.18	NEP - Investigations	£m	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000
4L.19	Improvements to river flows	£m	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000
4L.20	Metering (excluding cost of providing metering to new service connections) - meters requested by optants	£m	3	0.000	0.000	0.000	0.000	0.000	7.001	7.001
4L.21	Metering (excluding cost of providing metering to new service connections) - meters introduced by companies	£m	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000
4L.22	Metering (excluding cost of providing metering to new service connections) - other	£m	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000
4L.23	Drought Management Plan	£m	3	0.000	0.188	0.000	0.000	0.000	0.000	0.188
4L.24	Exclusions	£m	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000
4L.25	Leakage Reduction - UQ	£m	3	0.000	0.000	0.000	0.000	0.000	23.323	23.323

Cumulative expenditure on schemes completed in the report year						
Water resources		Network plus				Total
Abstraction licences	Raw water abstraction	Raw water transport	Raw water storage	Water treatment	Treated water distribution	
0.000	0.000	0.000	0.000	0.000	8.903	8.903
0.000	0.000	0.000	0.000	0.000	8.632	8.632
0.000	0.000	0.000	0.000	13.753	0.000	13.753
0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.000	0.030	0.010	0.008	0.164	0.460	0.672
0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000	7.001	7.001
0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.000	0.214	0.000	0.000	0.000	0.000	0.214
0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000	14.547	14.547

Table 4L: Enhancement expenditure by purpose – wholesale water (continued)

For the 12 months ended 31 March 2019

Line description	Units	DPs	Expenditure in report year							Total
			Water resources		Network plus					
			Abstraction licences	Raw water abstraction	Raw water transport	Raw water storage	Water treatment	Treated water distribution		

A - Enhancement expenditure by purpose										
4L.26	Reduction in Interruptions to Supply - UQ	£m	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000
4L.27	Improving Water Quality - UQ	£m	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000
4L.28	Infrastructure network reinforcement	£m	3	0.000	0.000	0.000	0.000	0.000	1.614	1.614
4L.29	Capital expenditure purpose - WATER additional line 7 [Other categories]	£m	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000
4L.30	Capital expenditure purpose - WATER additional line 8 [Other categories]	£m	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000
4L.31	Capital expenditure purpose - WATER additional line 9 [Other categories]	£m	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000
4L.32	Capital expenditure purpose - WATER additional line 10 [Other categories]	£m	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000
4L.33	Capital expenditure purpose - WATER additional line 11 [Other categories]	£m	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000
4L.34	Capital expenditure purpose - WATER additional line 12 [Other categories]	£m	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000
4L.35	Capital expenditure purpose - WATER additional line 13 [Other categories]	£m	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Cumulative expenditure on schemes completed in the report year						
Water resources		Network plus				Total
Abstraction licences	Raw water abstraction	Raw water transport	Raw water storage	Water treatment	Treated water distribution	

0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000	0.000	0.000

Table 4L: Enhancement expenditure by purpose – wholesale water (continued)

For the 12 months ended 31 March 2019

Line description		Units	DPs	Expenditure in report year						
				Water resources		Network plus				Total
				Abstraction licences	Raw water abstraction	Raw water transport	Raw water storage	Water treatment	Treated water distribution	
4L.36	Capital expenditure purpose - WATER additional line 14 [Other categories]	£m	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000
4L.37	Capital expenditure purpose - WATER additional line 15 [Other categories]	£m	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000
4L.38	Total enhancement capital expenditure	£m	3	0.000	5.409	0.015	0.012	17.729	49.778	72.943

Key

Input cell Calculation cell

Please refer to RAG 4.08 - Guideline for the table definitions in the annual performance report for the reporting year 2018-2019

Cumulative expenditure on schemes completed in the report year						
Water resources		Network plus				Total
Abstraction licences	Raw water abstraction	Raw water transport	Raw water storage	Water treatment	Treated water distribution	
0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.000	3.350	0.010	0.008	13.917	39.646	56.931

This table identifies the expenditure associated with the delivery of our enhancement programmes both in the current report year and then a cumulative expenditure viewpoint on projects/schemes that have been delivered in the current report year. Expenditure claimed in the report year may therefore be against outputs that have been previously beneficially completed or on outputs that are forecast to be completed in future years.

Below we have summarised the areas of expenditure on any line with more than £0.5m of expenditure in either the current report year or cumulative totals.

Table 4L Line 1. NEP - Making ecological improvements at abstractions (Habitats Directive, SSSI, NERC, BAPs)

Investment within the year of £3.2m is across several areas of activity required to meet our NEP obligations.

Work is ongoing to comply with the Water Framework Directive (WFD) for Heavily Modified Water Bodies (HMWB) and we have invested £293k in this area across several schemes.

We also have an ongoing programme of work with Fountains Forestry to restore and enhance areas of ancient woodland which this year has spent £199k.

Work also continues to deliver our defined fish pass solutions with the majority of our investment taking place at Jordans Weir (£1.3m) and Wharnccliffe (£0.9m). These schemes also concluded in the year with cumulative expenditure of work at Jordans Weir of £1.3m and Wharnccliffe at £1.4m.

Other schemes to conclude this year are three HMWB schemes at Scargill IRE (£139k), Langsett, Stubden and Agden, the river Burn, Winscar, Doe Park, Embsay, Gouthwaite, Lindley Wood, Lumley Moor, Riva, Scort Dike, Weeher, and Witherns Clough (£110k) and another relating to sediment trials (£43k).

Table 4L Line 2. NEP - Eels Regulations (measures at intakes)

Work has started this year at Loftsom Bridge WTW (£1.4m) to install an EA approved Hydrolox, travelling fine mesh screens for fish and eels on the existing river intake. The scheme has not completed within year.

Table 4L Line 11. New developments

Investment of £8.4m is to ensure we are compliant with Water Industry Act 1991 to provide water mains to deliver supplies of water sufficient for domestic purposes. This investment funds the cost of designing and building or

purchasing new water mains during the current report year. Expenditure is primarily an annual block allocation allowance (£8.2m) with smaller schemes comprising the remaining amounts.

The annual block allocation allowance (£8.2m) also completed in the current report year and we concluded three further schemes at Westerdale (£297k), Harrogate (£165k) and another multi-site scheme (£241k).

Table 4L Line 12. New connections element of new development (CPs, meters)

Investment in the current report year of £8.6m is to ensure we are compliant with section 45 of the Water Industry Act which describes a water undertaker's duty to provide water connections for new properties.

This is an annual block allocation allowance that is also reported in the cumulative expenditure of £8.6m as these are against solutions that have all been completed in the current report year.

Table 4L Line 13. Investment to address raw water deterioration (THM, nitrates, Crypto, pesticides, others)

Expenditure within the year is primarily (£17.5m) within Water Treatment and mostly relates to three key schemes. At Langsett WTW we are delivering a DWI solution to upgrade the existing plant to address total trihalomethanes, raw water colour and disinfection by-products to secure compliance with Regulation 26(1A). This has an agreed compliance date of 31 December 2019 and this year has spent £11.9m.

There was further expenditure of £0.5m at three sites (Harlow Hill, Thornton Steward and Eccup 1) to restore upland peatlands (Safeguard Zones) to address deteriorating raw water quality.

Also, work continued this year at Irton WTW and £4.0m has been spent providing facilities to improve the removal of Cryptosporidium, pesticides, disinfection by-products, to secure compliance with Regulation 26 (1A), and to carry out a programme of catchment management activities to improve raw water quality. The agreed compliance date was 31st December 2018 and was met on 23rd November 2018 with a total cumulative scheme cost of £13.3m.

Two Safeguard Zone (SgZ) schemes concluded in the year. These focussed on sources of nitrates in ground water SgZ's and had a compliance date of 1st January 2019. This was met on 31st December 2018 with cumulative scheme costs of £0.5m.

Table 4L Line 15. SEMD

Investment in the current year of £1.0m to deliver physical security works improvements to ensure we are compliant with our security obligations at relevant sites across all of our water assets. The scope of work includes all elements of security including fences, enclosures (buildings and kiosks), access covers, access points (doors and windows) and alarms.

This is a rolling programme of work that continues throughout the AMP across many hundreds of sites. Some have been completed in the current year and therefore included in the cumulative expenditure (£0.7m) to reflect the assets that have been completed only.

Table 4L Line 20. Metering (excluding cost of providing metering to new service connections) - meters requested by optants

Investment to ensure that any customer that requests to change to a measured supply through our domestic meter optant programme have a meter fitted at no cost to them. In the current year £7.0m has delivered 28,179 meters fitted for customers.

Table 4L Line 25. Leakage Reduction – UQ

This is investment to support the delivery of reduced leakage below our current service level commitments and industry upper quartile performance for our customers. Investment within the current year was £23.3m and reflects many new initiatives that have commenced. Activities include further work to address communication pipe failures (£3.6m), stop tap renewals (£2.3m), distribution pipework fitting (£2.1m) and structural mains (£1.8m). Our programme of installing a network of acoustic loggers continues (£1.5m) and is scheduled to complete in 2019/2020.

As part of our plans to increase the number of leakage inspectors we have spent £2.8m in relation to the purchase of further fleet vehicles and a further £3.1m relating to the required hardware (laptops, mobile phones etc) and software licences.

Within the year a number of the above initiatives have concluded including communication pipe failures (£3.6m), stop tap renewals (£2.3m), distribution pipework fitting (£2.1m) and structural mains (£1.8m).

Table 4L Line 28. Infrastructure Network Reinforcement

Expenditure within the year relates to the network reinforcement of mains and service reservoirs in Harrogate, Luddenden Foot, Farndale, Boston Park and Sneaton Castle.

Comparison to PR19 submission

Within the enhancement programme expenditure within 2018/2019 is 8% (£6m) lower than our submitted PR19 forecast. We have seen delivery delays to some of our upper quartile programmes of work, again due to re-allocation of resources to support the business as we saw an unprecedented number of network outbreaks caused by the extreme weather changes. This in turn has also driven the variance to our PR19 submitted cumulative expenditure as we had originally assumed these schemes would conclude within the year.

This reduction in upper quartile expenditure has been offset, in part, by increased costs for new connections (4L.12) and meters requested by optants (4L.20). We have also seen continued cost pressures to deliver our remaining water quality obligations which, when completed, will support any future water resource issues, as seen this year after the long dry summer where we managed resources without the need for any water use restrictions.

Table 4M: Enhancement expenditure by purpose – wholesale wastewater

For the 12 months ended 31 March 2019

Line description	Units	DPs	Expenditure in report year									Total
			Network plus sewage collection			Network plus sewage treatment		Sludge				
			Foul	Surface water drainage	Highway drainage	Sewage treatment and disposal	Sludge liquor treatment	Sludge transport	Sludge treatment	Sludge disposal		

A - Enhancement expenditure by purpose												
4M.1	First time sewerage (s101A)	£m	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
4M.2	Sludge enhancement (quality)	£m	3	0.000	0.000	0.000	0.002	0.000	0.000	-0.002	0.000	0.000
4M.3	Sludge enhancement (growth)	£m	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
4M.4	NEP - Conservation drivers	£m	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
4M.5	NEP - Eels Regulations (measures at outfalls)	£m	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
4M.6	NEP - Event Duration Monitoring at intermittent discharges	£m	3	0.000	0.000	0.000	1.640	0.000	0.000	0.000	0.000	1.640
4M.7	NEP - Flow monitoring at sewage treatment works	£m	3	0.000	0.000	0.000	-0.724	0.000	0.000	0.000	0.000	-0.724
4M.8	NEP - Monitoring of pass forward flows at CSOs	£m	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
4M.9	NEP - Schemes to increase flow to full treatment	£m	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
4M.10	NEP - Schemes to increase storm tank capacity	£m	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
4M.11	NEP - Storage schemes to reduce spill frequency at CSOs, storm tanks, etc	£m	3	0.175	0.193	0.081	-0.177	0.000	0.000	0.000	0.000	0.272
4M.12	NEP - Chemicals monitoring / investigations / options appraisals	£m	3	0.000	0.000	0.000	0.769	0.000	0.000	0.000	0.000	0.769
4M.13	NEP - National phosphorus removal technology investigations	£m	3	0.000	0.000	0.000	-0.012	0.000	0.000	0.000	0.000	-0.012
4M.14	NEP - Groundwater schemes	£m	3	0.000	0.000	0.000	-0.192	0.000	0.000	0.000	0.000	-0.192

Cumulative expenditure on schemes completed in the report year								
Network plus sewage collection			Network plus sewage treatment		Sludge			Total
Foul	Surface water drainage	Highway drainage	Sewage treatment and disposal	Sludge liquor treatment	Sludge transport	Sludge treatment	Sludge disposal	

0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.000	0.000	0.000	1.952	0.000	0.000	0.000	0.000	1.952
0.000	0.000	0.000	1.531	0.000	0.000	0.000	0.000	1.531
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.840	0.000	0.000	0.000	0.000	0.840
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Table 4M: Enhancement expenditure by purpose – wholesale wastewater (continued)

For the 12 months ended 31 March 2019

Line description	Units	DPs	Expenditure in report year									Total
			Network plus sewage collection			Network plus sewage treatment		Sludge				
			Foul	Surface water drainage	Highway drainage	Sewage treatment and disposal	Sludge liquor treatment	Sludge transport	Sludge treatment	Sludge disposal		

A - Enhancement expenditure by purpose

4M.15	NEP - Investigations	£m	3	0.001	0.001	0.000	0.323	0.000	0.000	0.000	0.000	0.325
4M.16	NEP - Nutrients (N removal)	£m	3	0.000	0.000	0.000	0.007	0.000	0.000	0.000	0.000	0.007
4M.17	NEP - Nutrients (P removal at activated sludge STWs)	£m	3	0.000	0.000	0.000	11.376	0.000	0.000	0.000	0.000	11.376
4M.18	NEP - Nutrients (P removal at filter bed STWs)	£m	3	0.000	0.000	0.000	32.397	0.000	0.000	0.000	0.000	32.397
4M.19	NEP - Reduction of sanitary parameters	£m	3	0.134	0.148	0.062	42.822	0.000	0.000	3.399	0.000	46.565
4M.20	NEP - UV disinfection (or similar)	£m	3	0.000	0.000	0.000	-0.162	0.000	0.000	0.000	0.000	-0.162
4M.21	NEP - Discharge relocation	£m	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
4M.22	NEP - Flow 1 schemes	£m	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
4M.23	Odour	£m	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
4M.24	New development and growth	£m	3	0.854	0.941	0.394	0.000	0.000	0.000	0.000	0.000	2.189
4M.25	Growth at sewage treatment works (excluding sludge treatment)	£m	3	0.000	0.000	0.000	1.345	0.000	0.000	0.000	0.000	1.345
4M.26	Resilience	£m	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
4M.27	SEMD	£m	3	0.435	0.381	0.282	1.432	0.035	0.135	0.480	0.017	3.197
4M.28	Reduce flooding risk for properties	£m	3	3.261	3.595	1.505	0.000	0.000	0.000	0.000	0.000	8.361
4M.29	Transferred private sewers and pumping stations	£m	3	4.481	4.940	2.068	0.000	0.000	0.000	0.000	0.000	11.489
4M.30	Bathing water ELoS	£m	3	0.000	0.000	0.000	0.009	0.000	0.000	0.000	-0.001	0.008

Cumulative expenditure on schemes completed in the report year								
Network plus sewage collection			Network plus sewage treatment		Sludge			Total
Foul	Surface water drainage	Highway drainage	Sewage treatment and disposal	Sludge liquor treatment	Sludge transport	Sludge treatment	Sludge disposal	

0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2.642	2.913	1.220	0.000	0.000	0.000	0.000	0.000	6.775
0.000	0.000	0.000	0.013	0.000	0.000	0.000	0.000	0.013
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.177	0.155	0.115	0.584	0.014	0.055	0.196	0.007	1.303
3.761	4.147	1.736	0.000	0.000	0.000	0.000	0.000	9.644
4.432	4.886	2.045	0.000	0.000	0.000	0.000	0.000	11.363
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Table 4M: Enhancement expenditure by purpose – wholesale wastewater (continued)

For the 12 months ended 31 March 2019

Line description	Units	DPs	Expenditure in report year									Total
			Network plus sewage collection			Network plus sewage treatment		Sludge				
			Foul	Surface water drainage	Highway drainage	Sewage treatment and disposal	Sludge liquor treatment	Sludge transport	Sludge treatment	Sludge disposal		

A - Enhancement expenditure by purpose												
4M.31	Pollution ELoS	£m	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
4M.32	Connections (if applicable)	£m	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
4M.33	Emergency Overflow Appeals	£m	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
4M.34	Exclusions	£m	3	0.000	0.000	0.000	0.000	0.000	0.000	-0.002	0.000	-0.002
4M.35	Pollution - UQ	£m	3	2.062	2.274	0.952	0.000	0.000	0.000	0.000	0.000	5.288
4M.36	Internal Flooding - UQ	£m	3	6.332	6.981	2.922	0.000	0.000	0.000	0.000	0.000	16.235
4M.37	Infrastructure network reinforcement	£m	3	0.629	0.694	0.291	0.000	0.000	0.000	0.000	0.000	1.614
4M.38	Capital expenditure purpose - WASTEWATER additional line 9 [Other categories]	£m	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
4M.39	Capital expenditure purpose - WASTEWATER additional line 10 [Other categories]	£m	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
4M.40	Capital expenditure purpose - WASTEWATER additional line 11 [Other categories]	£m	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
4M.41	Capital expenditure purpose - WASTEWATER additional line 12 [Other categories]	£m	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
4M.42	Capital expenditure purpose - WASTEWATER additional line 13 [Other categories]	£m	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Cumulative expenditure on schemes completed in the report year								
Network plus sewage collection			Network plus sewage treatment		Sludge			Total
Foul	Surface water drainage	Highway drainage	Sewage treatment and disposal	Sludge liquor treatment	Sludge transport	Sludge treatment	Sludge disposal	

0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.871	0.960	0.402	0.000	0.000	0.000	0.000	0.000	2.233
0.017	0.019	0.008	0.000	0.000	0.000	0.000	0.000	0.044
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Table 4M: Enhancement expenditure by purpose – wholesale wastewater (continued)

For the 12 months ended 31 March 2019

Line description	Units	DPs	Expenditure in report year									Total
			Network plus sewage collection			Network plus sewage treatment		Sludge				
			Foul	Surface water drainage	Highway drainage	Sewage treatment and disposal	Sludge liquor treatment	Sludge transport	Sludge treatment	Sludge disposal		
4M.43 Capital expenditure purpose - WASTEWATER additional line 14 [Other categories]	£m	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
4M.44 Capital expenditure purpose - WASTEWATER additional line 15 [Other categories]	£m	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
4M.45 Total enhancement capital expenditure	£m	3	18.364	20.148	8.557	90.855	0.035	0.135	3.875	0.016	141.985	

Key

Input cell Calculation cell

Please refer to RAG 4.08 - Guideline for the table definitions in the annual performance report for the reporting year 2018-2019

Cumulative expenditure on schemes completed in the report year								
Network plus sewage collection			Network plus sewage treatment		Sludge			Total
Foul	Surface water drainage	Highway drainage	Sewage treatment and disposal	Sludge liquor treatment	Sludge transport	Sludge treatment	Sludge disposal	
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
11.900	13.080	5.526	4.920	0.014	0.055	0.196	0.007	35.698

This table identifies the expenditure associated with the delivery of our enhancement programmes both in the current report year and then a cumulative expenditure viewpoint on projects/schemes that have been delivered in the current report year. Expenditure claimed in the report year may therefore be against outputs that have been previously beneficially completed or on outputs that are forecast to be completed in future years.

Below we have summarised the areas of expenditure on any line with more than £0.5m of expenditure in either the current report year or cumulative totals.

Table 4M Line 6. NEP - Event Duration Monitoring at intermittent discharges

Expenditure in the current year (£1.6m) relates to schemes at multiple sites where we continue to deliver the agreed EDM2 regulatory outputs. The EDM2 driver has a compliance date of 31st March 2020 and provides coverage for the majority of non-priority overflows, addressing sites classified as high, medium or low amenity value but where the risk is of environmental or aesthetic nature or the frequency of discharge breaches a public acceptability threshold.

Reported cumulative expenditure (£1.9m) covers the 169 EDM2 outputs delivered within the year.

Table 4M Line 7. NEP - Flow monitoring at sewage treatment works

Within the year £255k relates to the installing of replacement flow meters in order bring flow monitoring systems up to MCERTS requirements at: Airton, Castle Botton, Asenby, Gillamoor, Leavening, Coneysthorpe, Newsham, Rainton, West Burton, Reighton.

Table 4M Line 12. NEP - Chemicals monitoring/investigations/options appraisals

Expenditure this year (£0.8m) in sewage treatment and disposal relates to 25 wastewater sites.

Reported cumulative scheme expenditure (£0.8m) covers 13 wastewater sites completed in the current year and includes Eggborough, Hillam, Cooper Bridge, Colne Bridge, Meltham, Normanton, Ripponden Wood, Stanley, Byram Park, Pontefract, Clayton West, Goole Rawcliffe and Barwick in Elmet.

Table 4M Line 15. NEP – Investigations

Expenditure this year (£325k) relates mainly to sewage treatment and disposal for the delivery of Drainage Area Plans (DAPs) at Little Don, Dearne (Bentley to Cawthorne), Went, Adwick Le Street, Hemsworth, South Elmsall, Dearne (Lundwood to R Dove), Holmebrook, Costa Beck, Spen Beck and Wyke Beck (£272k). Work is also ongoing on two Water Framework studies at Ripponden Wood and the Humber Estuary (£53k).

Table 4M Line 17. NEP - Nutrients (P removal at activated sludge STWs)

Within sewage treatment & disposal (£11.4m) £10.2m of expenditure relates to four phosphorus (P) removal schemes at Wetherby (£3.7m), Skipton (£2.1m), Crayke (£1.4m) & Earby (£3.1m). These schemes are ongoing and have an agreed compliance date of 31st March 2020.

Table 4M Line 18. NEP - Nutrients (P removal at filter bed STWs)

Expenditure within the year (£32.4m) relates to P removal schemes at: Denholme, Wath (Ripon), Embsay, Patrington & Sherburn, Tollerton & Thornton le Dale, Easingwold, Skipton, Crayke, Leeming bar, Borrowby, Otley, Beadle, Earby, Thirsk, Gargrave & Middleton Tyas, Thorp Arch, Wilberfoss, Foulridge and Bagby.

These schemes are ongoing and have an agreed compliance date of 31st March 2020.

Table 4M Line 19. NEP - Reduction of sanitary parameters

Expenditure this year relates mainly to sewage treatment & disposal (£42.8m) for the delivery of eight schemes at: Bolton on Dearne, Stocksbridge, Dronfield, Lundwood, Leven, Cherry Burton, West Bretton and Hillam. Within sludge treatment there is a further £3.4m which also relates to Dronfield.

These schemes are ongoing and have an agreed compliance date of 31st March 2020.

Table 4M Line 24. New development and growth

Expenditure in the year of £2.2m across Network+ Sewage Collection is to ensure we are compliant under Section 98 of the Water Industry Act 1991 to provide a public sewer to be used for the drainage (for domestic purposes) of premises in a particular locality in the area subject to certain conditions. Investment is across many schemes ongoing throughout the year.

Reported cumulative expenditure of £6.8m relates primarily to four schemes at West Green, Pocklington (£1.8m), Station Road, Scalby (£1.5m), Flass Lane, Castleford (£1.3m) and Mickle Hill, Castleford (£0.9m).

Table 4M Line 25. Growth at sewage treatment works (excluding sludge treatment)

Within sewage treatment and disposal expenditure relates to numerous sites, with the majority relating to work undertaken at Beverly STW (£1.0m) and Whitby STW (£0.3m).

Table 4M Line 27. SEMD

Investment in the current year of £3.2m to deliver physical security works improvements to ensure we are compliant with our security obligations at relevant sites across all of our wastewater assets. The scope of work includes all elements of security including fences, enclosures (buildings and kiosks), access covers, access points (doors and windows) and alarms.

This is a rolling programme of work that continues throughout the AMP across many hundreds of sites. Some have been completed in the current year and therefore included in the cumulative expenditure of £1.3m to reflect the assets that have been completed only.

Table 4M Line 28. Reduce flooding risk for properties

Expenditure across network+ sewage collection primarily comprises the resolution of internal flooding issues at 3 locations in Goole (£2.8m) in addition to Hazelwood CSO (£1.3m), Barhale STW (£1.1m) and Goole & Rawcliffe Fire Stations (£2.5m).

Table 4M Line 29. Transferred private sewers and pumping stations

Expenditure this year relates to private sewers within sewage collection. These are annual block schemes (£5.8m) which are a collaboration of many different sites doing the same work. These have all completed within the year and so are as reported cumulative expenditure.

Other investment in the current year is associated with transferred private pumping stations (£5.7m). Most of these have completed in year so are reported as cumulative expenditure.

Table 4M Line 35. Pollution – UQ

As part of our plan to target upper quartile pollution performance reported expenditure this year relates mainly to rising main investigations at 34 sites (£0.8m), the installation of 977 pollution loggers and 13 'Reach Out' controllers on Sewage Pumping Stations (£2.8m). We are purchasing 42 new vehicles to support new colleagues joining the organisation (£0.5m), along with the necessary IT hardware and software (£1m).

Table 4M Line 36. Internal Flooding – UQ

As part of our plan to target upper quartile internal flooding performance expenditure this year relates to schemes aimed at tackling internal flooding other causes in Leeds (Beeston, Harehills & Richmond Hill) and Bradford (East and South) (£1.7m), sewer network investigation and defect rectification schemes (across up to 130k properties) (£6.1m). We are also purchasing additional vans (x131), CCTV units (x3) and tankers (x6) (£8.4m).

Table 4M Line 37. Infrastructure network reinforcement

Expenditure relates to phase one of a scheme south of Sheffield Parkway to deliver the necessary infrastructure for a development of 3,250 properties. Phase one relates to the creation of a twinned rising main section (1 - 1.1km).

Comparison to PR19 submission

Within the enhancement programme expenditure in 2018/2019 is 3% (£5m) lower than our submitted PR19 forecast.

As with clean water (4L) we have seen delivery delays to some of our upper quartile programmes of work. This in turn is also driving the variance to our PR19 submitted cumulative expenditure as we had originally assumed these schemes would conclude within the year.

This reduction in upper quartile expenditure has been offset, in part, by our programme to deliver our wastewater quality environment programme (NEP). Good progress has been made in 2018/2019 to accelerate delivery of the programme.

Table 4N: Sewage treatment – functional expenditure

For the 12 months ended 31 March 2019

Line description		Unit	DPs	Network plus
A - Costs of STWs in size bands 1 to 5				
4N.1	Direct costs of STWs in size band 1	£000	3	2984.131
4N.2	Direct costs of STWs in size band 2	£000	3	1979.518
4N.3	Direct costs of STWs in size band 3	£000	3	4647.576
4N.4	Direct costs of STWs in size band 4	£000	3	6578.861
4N.5	Direct costs of STWs in size band 5	£000	3	8809.751
4N.6	General & support costs of STWs in size bands 1 to 5	£000	3	3398.776
4N.7	Functional expenditure of STWs in size bands 1 to 5	£000	3	28398.613
B - Costs of STWs in size band 6				
4N.8	Service charges for STWs in size band 6	£000	3	2811.358
4N.9	Estimated terminal pumping costs size band 6 works	£000	3	962.607
4N.10	Other direct costs of STWs in size band 6	£000	3	43469.997
4N.11	Direct costs of STWs in size band 6	£000	3	47243.962
4N.12	General & support costs of STWs in size band 6	£000	3	6617.417
4N.13	Functional expenditure of STWs in size band 6	£000	3	53861.380
4N.14	Total Functional expenditure for Sewage treatment	£000	3	82259.993

Key

Input cell Calculation cell

Please refer to RAG 4.08 - Guideline for the table definitions in the annual performance report for the reporting year 2018-2019

This table was introduced last financial year and analyses the costs of different size sewage treatment works. We have allocated all direct costs to site where possible, with nearly all large works separately costed. For minor works which are grouped into areas for materiality reasons, the costs were sub-divided into the following categories for optimum allocation

- Site specific
- Area site costs
- Employee direct costs
- Maintenance
- Facilities costs
- General and Support

The requirement for the table is to have all above costs directly/indirectly allocated in bands 1-6 which are defined in the RAGs 4.08. The information to split the sites into bands and STW loads has been reviewed again this year from the asset inventory system, and any changes in loads and band categories have been adjusted accordingly.

Table 40: Wholesale waste water service – large sewage treatment works

For the 12 months ended 31 March 2019

Line description		Bon Code	Unit	DPs	STWNAMED01	STWNAMED02	STWNAMED03
A - Sludge treatment works - Explanatory variables							
40.1	Works name	STWNAME01	Text	0	ALDWARKE/STW	BEVERLEY/STW	BLACKBURN MEADOWS/STW
40.2	Classification of treatment works	STWB045	Text	0	SAS	TB1	SAS
40.3	Population equivalent of total load received	STWB005	000	2	112.80	37.84	512.42
40.4	Suspended solids consent	STWB011	mg/l	0	40	60	30
40.5	BOD5 consent	STWB012	mg/l	0	30	40	15
40.6	Ammonia consent	STWB014	mg/l	0	3	10	3
40.7	Phosphorus consent	STWB015	mg/l	0	0	0	0
40.8	UV consent	STWB016	mW/s/cm ²	0	0	0	0
40.9	Load received by STW	STWB017	kgBOD ₅ /d	0	6768	2270	30745
40.10	Flow passed to full treatment	STWB018	m ³ /d	0	33,598	11,991	183,810

B - Sewage treatment works - Functional expenditure							
40.11	Service charges	STWB040	£000	0	79	30	291
40.12	Estimated terminal pumping expenditure	STWB038	£000	0	0	0	537
40.13	Other direct expenditure	STWB033	£000	0	1268	480	4642
40.14	Total direct expenditure	STWB033	£000	0	1347	510	5470
40.15	General and support expenditure	STWB036	£000	0	187	71	684
40.16	Functional expenditure	STWB037	£000	0	1534	580	6153

Line description		Bon Code	Unit	DPs	STWNAMED11	STWNAMED12	STWNAMED13
A - Sludge treatment works - Explanatory variables							
40.1	Works name	STWNAME01	Text	0	DEWSBURY/STW	DOWLEY GAP/STW	GARFORTH/STW
40.2	Classification of treatment works	STWB045	Text	0	SAS	SB	TA1
40.3	Population equivalent of total load received	STWB005	000	2	347.39	39.50	41.88
40.4	Suspended solids consent	STWB011	mg/l	0	65	75	30
40.5	BOD5 consent	STWB012	mg/l	0	38	40	13
40.6	Ammonia consent	STWB014	mg/l	0	5	10	6
40.7	Phosphorus consent	STWB015	mg/l	0	0	0	0
40.8	UV consent	STWB016	mW/s/cm ²	0	0	0	0
40.9	Load received by STW	STWB017	kgBOD ₅ /d	0	20843	2370	2513
40.10	Flow passed to full treatment	STWB018	m ³ /d	0	84,901	11,694	8,579

B - Sewage treatment works - Functional expenditure							
40.11	Service charges	STWB040	£000	0	157	14	23
40.12	Estimated terminal pumping expenditure	STWB038	£000	0	0	0	0
40.13	Other direct expenditure	STWB033	£000	0	2515	224	361
40.14	Total direct expenditure	STWB033	£000	0	2672	238	384
40.15	General and support expenditure	STWB036	£000	0	371	33	53
40.16	Functional expenditure	STWB037	£000	0	3043	271	437

STWNAMED04	STWNAMED05	STWNAMED06	STWNAMED07	STWNAMED08	STWNAMED09	STWNAMED10
BOLTON ON DEARNE/STW	BRADFORD ESHOLT/NO 2 STW	BRIDLINGTON STW	BRIGHOUSE/ UPPER STW	CALDER VALE/ STW	CASTLEFORD/STW	DENABY/NO 2 STW
	TA2	TA2	SAS	SAS	SAS	SAS
	403.89	42.11	54.08	139.81	31.11	32.58
	20	60	30	30	65	35
	10	0	20	20	45	25
	3	0	5	3	10	9
	0	0	0	0	0	0
	0	20	0	0	0	0
0	24233	2527	3245	8389	1867	1955
	122,652	11,155	19,298	34,454	12,716	7,206

	354	35	147	92	15	16
	218	0	0	0	16	29
	4892	564	1883	1466	247	263
0	5463	599	2030	1558	279	309
	832	83	347	216	36	39
0	6296	682	2377	1774	316	348

STWNAMED14	STWNAMED15	STWNAMED16	STWNAMED17	STWNAMED18	STWNAMED19	STWNAMED20
HALIFAX/STW	HARROGATE NORTH/STW	HARROGATE SOUTH/STW	HUDDERSFIELD STW GROUP	HULL/STW	KEIGHLEY MARLEY/ STW	KNOSTROP/STW
	SB	SAS		SAS	SB	SAS
	43.74	39.47		494.36	90.77	698.41
	40	30		0	45	50
	14	20		0	25	18
	10	3		0	15	3
	0	0		0	0	0
	0	0		0	0	0
0	2624	2368	0	29662	5446	41905
	13,001	12,009		96,918	31,788	223,871

	25	23		297	58	340
	0	0		0	0	30
	398	361		4749	921	5439
0	423	384	0	5046	979	5810
	59	53		700	136	801
0	482	437	0	5746	1115	6611

Table 40: Large sewage treatment works – wholesale wastewater (continued)

For the 12 months ended 31 March 2019

Line description	Bon Code	Unit	DPs	STWNAMED21	STWNAMED22	STWNAMED23
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A - Sludge treatment works - Explanatory variables

40.1	Works name	STWNAME01	Text	0	LEMONROYD/STW	LUNDWOOD/STW	MALTON/STW
40.2	Classification of treatment works	STWB045	Text	0	TA1	TB2	TB2
40.3	Population equivalent of total load received	STWB005	000	2	32.71	87.66	28.07
40.4	Suspended solids consent	STWB011	mg/l	0	45	40	50
40.5	BOD5 consent	STWB012	mg/l	0	25	20	25
40.6	Ammonia consent	STWB014	mg/l	0	5	5	11
40.7	Phosphorus consent	STWB015	mg/l	0	0	0	1
40.8	UV consent	STWB016	mW/s/cm ²	0	0	0	0
40.9	Load received by STW	STWB017	kgBOD ₅ /d	0	1963	5260	1684
40.10	Flow passed to full treatment	STWB018	m ³ /d	0	7,594	21,401	4,553

B - Sewage treatment works - Functional expenditure

40.11	Service charges	STWB040	£000	0	27	39	63
40.12	Estimated terminal pumping expenditure	STWB038	£000	0	0	0	0
40.13	Other direct expenditure	STWB033	£000	0	425	623	1007
40.14	Total direct expenditure	STWB033	£000	0	451	662	1070
40.15	General and support expenditure	STWB036	£000	0	63	92	148
40.16	Functional expenditure	STWB037	£000	0	514	753	1218

Line description	Bon Code	Unit	DPs	STWNAMED31	STWNAMED32	STWNAMED33
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A - Sludge treatment works - Explanatory variables

40.1	Works name	STWNAME01	Text	0	STAVELEY/STW	SUTTON/STW	THORNE/STW
40.2	Classification of treatment works	STWB045	Text	0	SAS	SB	SAS
40.3	Population equivalent of total load received	STWB005	000	2	31.11	65.97	39.41
40.4	Suspended solids consent	STWB011	mg/l	0	25	35	150
40.5	BOD5 consent	STWB012	mg/l	0	15	25	150
40.6	Ammonia consent	STWB014	mg/l	0	5	8	50
40.7	Phosphorus consent	STWB015	mg/l	0	0	0	0
40.8	UV consent	STWB016	mW/s/cm ²	0	0	0	0
40.9	Load received by STW	STWB017	kgBOD ₅ /d	0	1867	3958	2365
40.10	Flow passed to full treatment	STWB018	m ³ /d	0	7,447	11,081	9,829

B - Sewage treatment works - Functional expenditure

40.11	Service charges	STWB040	£000	0	73	18	22
40.12	Estimated terminal pumping expenditure	STWB038	£000	0	0	0	0
40.13	Other direct expenditure	STWB033	£000	0	1170	283	355
40.14	Total direct expenditure	STWB033	£000	0	1243	300	377
40.15	General and support expenditure	STWB036	£000	0	172	42	52
40.16	Functional expenditure	STWB037	£000	0	1415	342	429

STWNAMED24	STWNAMED25	STWNAMED26	STWNAMED27	STWNAMED28	STWNAMED29	STWNAMED30
NEILEY/NO 2 STW	NORMANTON/STW	OLD WHITTINGTON/STW	RAWCLIFFE YORK/STW	SANDALL/STW	SCARBOROUGH/STW	SOUTH ELMSALL/STW
SAS	SB	SAS	TA1	SAS	TA2	SB
25.41	44.71	117.29	26.02	97.64	56.98	34.45
70	40	25	50	60	60	30
21	35	15	30	40	0	15
3	14	3	21	10	0	5
0	0	0	0	0	0	0
0	0	0	0	0	16	0
1525	2683	7037	1561	5858	3419	2067
9,501	14,956	32,268	5,752	23,780	18,895	9,234

28	13	75	27	75	48	20
0	0	0	0	132	0	0
363	205	1204	427	1201	773	314
392	217	1279	454	1408	822	334
67	30	177	63	177	114	46
459	248	1457	517	1585	935	380

STWNAMED34	STWNAMED35	STWNAMED36	STWNAMED37	STWNAMED38	STWNAMED39	STWNAMED40
WOMBWELL/STW	WOODHOUSE MILL/STW	YORK NABURN/STW	BRADFORD ESHOLT/NO 1 STW	KNOSTROP/H LEVEL STW	KNOSTROP/L LEVEL STW	NEILEY/NO 1 STW
SAS	SAS	SAS				
50.24	143.30	168.44				
30	40	55				
14	20	35				
2	3	6				
0	0	0				
0	0	0				
3014	8598	10106	0	0	0	0
11,950	30,522	46,464				

37	60	150				
0	0	0				
587	966	2395				
623	1027	2545	0	0	0	0
86	142	353				
710	1169	2898	0	0	0	0

Table 40: Large sewage treatment works – wholesale wastewater (continued)

For the 12 months ended 31 March 2019

Line description		Bon Code	Unit	DPs	STWNAMED41	STWNAMED42	STWNAMED43
A - Sludge treatment works - Explanatory variables							
40.1	Works name	STWNAME01	Text	0	NORTH BIERLEY/ STW	NORTHALLERTON/ STW	SALTERHEBBLE
40.2	Classification of treatment works	STWB045	Text	0			TA2
40.3	Population equivalent of total load received	STWB005	000	2			169.31
40.4	Suspended solids consent	STWB011	mg/l	0			50
40.5	BOD5 consent	STWB012	mg/l	0			35
40.6	Ammonia consent	STWB014	mg/l	0			5
40.7	Phosphorus consent	STWB015	mg/l	0			0
40.8	UV consent	STWB016	mW/s/cm ²	0			0
40.9	Load received by STW	STWB017	kgBOD ₅ /d	0	0	0	10159
40.10	Flow passed to full treatment	STWB018	m ³ /d	0			57,690
B - Sewage treatment works - Functional expenditure							
40.11	Service charges	STWB040	£000	0			9
40.12	Estimated terminal pumping expenditure	STWB038	£000	0			0
40.13	Other direct expenditure	STWB033	£000	0			117
40.14	Total direct expenditure	STWB033	£000	0	0	0	126
40.15	General and support expenditure	STWB036	£000	0			21
40.16	Functional expenditure	STWB037	£000	0	0	0	147

Key

 Input cell  Calculation cell

Please refer to RAG 4.08 - Guideline for the table definitions in the annual performance report for the reporting year 2018-2019

STWNAMED44	STWNAMED45	STWNAMED46	STWNAMED47	STWNAMED48	STWNAMED49	STWNAMED50
SELBY/NO.2 STW	SPENBOROUGH/ STW	TADCASTER/ TRADE STW	WHITBY/STW	YORK/NABURN	DEIGHTON/STW	
					TA2	
					218.96	
					30	
					20	
					5	
					0	
					0	
0	0	0	0	0	13138	0
					79,934	
					30	
					0	
					384	
0	0	0	0	0	414	0
					71	
0	0	0	0	0	485	0

Table 40 Lines 1-10. explanatory variables

These lines contain detailed information relating to the large waste water treatment works (WWTWs) with a population equivalent greater than 25,000. Each of the 35 Yorkshire Water sites is listed together with its treatment type, population equivalent, consent information for common parameters, and load received in 2018/2019.

There have been two changes in treatment type between APR18 and APR19. Dewsbury STW was reported as SB but has now changed to SAS, as this represents the majority of the treatment process on the site. Knostrop STW was reported as TA1 but is now SAS. Again, this reflects the actual arrangement of the site.

There have been some slight variations in the population equivalent of total load received, but the majority of these are minor and do not require further investigation. The two sites which have shown excess of 10% change are Bradford Esholt & Hull. Initial investigations suggest this is due to variation in trade loads.

The consent information in Lines 4 to 8 have remained the same for all of the large works.

The data provided in table 40.10 is representative of the average daily measured treated flow at Yorkshire Water's large STWs (greater than 25,000 equivalent population).

Compared to the previous year the overall volume of treated flow recorded at the Large STWs has decreased; with 26 out of 35 sites showing a daily average decrease. The decrease in volume of treated flow was anticipated in this reporting year due to the exceptionally dry summer and overall dry year for 2019.

Of the 9 sites which did show an increase in flows, 10 of these were by less than 5%. The remaining site, Wombwell had a percentage variation of less than 10%. These variations are considered completely normal and further investigation isn't required.

There was a greater shift towards reduced flows at the Large STWs. As previously mentioned this was to be expected because of the dry conditions in the reporting period. 15 of the 26 sites showing a decrease in treated volumes showed a change of less than 10%, again these variations are considered completely normal and not worthy of further investigation.

There were a further 9 sites which decreased by 10 - 17%, but due to the exceptionally dry year these changes are not deemed significant.

There were two sites which did show a significant decrease (excess of 22%). These have been investigated further and are explained below:

- Malton STW had a 23% decrease between APR18 and APR19. The bulk of this change can be associated with the dry weather over this period, but there were also other factors which reduced the treated effluent being passed through the works. By Q4 of 2018 Malton STW had become a failing works, and investigation found the works was being overloaded by local trade waste being discharged into the STW from traders operating above their consented volumes and / or loads. Offending traders were requested to reduce their trade effluent flows and Yorkshire Water also instigated some tankering of trade away to other works for treatment. It is estimated that the Yorkshire Water element was approx. 250m³/day, which would equate to approx. 4% less volume entering the works. This trade waste continues to be tankered away but is anticipated that this process will stop in 2019.
- Deighton STW had a decrease of 22% between APR18 and APR19. Again, the bulk of this change can be associated with the dry weather over this period, but there were other factors which changed the flow profile between the two reporting years. Following a failed Flow Meter Certification inspection (MCERT) remedial action was required to secure the flow sensor bracket. Previously the flow sensor had been attached to an unsecure bracket which was susceptible to movement, and potentially causing unreliable flow records. The sensor is now in a fixed position and has been deemed satisfactory by MCERT inspector.

Functional expenditure

This table follows on from 4N, lines 8-16 inclusive. All the sites above are separately costed within Yorkshire Water's accounting systems.

Section B of the table looks at functional expenditure for the large sewage treatment works which fall within band 6 category as shown in table 4N. The number of works in this category has changed from last year with the removal of Selby STW, which is now a band 5 category in 2018/2019. A review of functional expenditure at these sites and key movements include the following:

- Blackburn Meadows – increase in costs mainly associated with the mitigation costs due to lack of aeration resulting in hired equipment
- Brighouse Upper – Additional resources required on site to support compliance position and additional maintenance of screen and helical rotor pump
- Keighley Marley – increase in costs associated with additional fly dosing and cleaning of the filter beds
- Malton – this site has seen an increase in functional expenditure due to mitigation of site compliance due to additional loads to the site. Mitigation costs include additional tankering and hire equipment
- Old Whittington – the increase in costs from 2017/2018 at this site are mainly associated with maintenance of the primary tank scrapers and inlet screens
- Staveley – the increase in functional expenditure is as a result of the significant maintenance and repair required for the aeration blowers
- Woodhouse Mill – the maintenance of the compactor on site has resulted in an increase in cost for this site in 2018/2019
- York Naburn – to support customers alterations to acoustic wall have been made to help noise reduction from the aeration processes on site and additional lane cleaning has been done to ensure the aeration process is more efficient
- Deighton – this site has seen a reduction in costs from 2017/2018 due to the site requiring additional equipment to support the compliance position in the prior financial year which is no longer needed

Table 4P: Non-financial data for WR, WT and WD – wholesale water

For the 12 months ended 31 March 2019

Line description		Bon Code	Unit	DPs	Current year
A - Water resources					
4P.1	Proportion of distribution input derived from impounding reservoirs	BN4833	Propn 0 to 1	3	0.670
4P.2	Proportion of distribution input derived from pumped storage reservoirs	BN4834	Propn 0 to 1	3	0.073
4P.3	Proportion of distribution input derived from river abstractions	BN4838	Propn 0 to 1	3	0.062
4P.4	Proportion of distribution input derived from groundwater works, excluding managed aquifer recharge (MAR) water supply schemes	BN4848	Propn 0 to 1	3	0.195
4P.5	Proportion of distribution input derived from artificial recharge (AR) water supply schemes	BN4846	Propn 0 to 1	3	0.000
4P.6	Proportion of distribution input derived from aquifer storage and recovery (ASR) water supply schemes	BN4847	Propn 0 to 1	3	0.000
4P.7	Proportion of distribution input derived from saline abstractions	BN4854	Propn 0 to 1	3	0.000
4P.8	Proportion of distribution input derived from water reuse schemes	BN4855	Propn 0 to 1	3	0.000
4P.9	Number of impounding reservoirs	BN4830	nr	0	39
4P.10	Number of pumped storage reservoirs	BN4849	nr	0	3
4P.11	Number of river abstractions	BN4835	nr	0	9
4P.12	Number of groundwater works excluding managed aquifer recharge (MAR) water supply schemes	BN4851	nr	0	40
4P.13	Number of artificial recharge (AR) water supply schemes	BN4852	nr	0	0
4P.14	Number of aquifer storage and recovery (ASR) water supply schemes	BN4853	nr	0	0
4P.15	Number of saline abstraction schemes	BN4856	nr	0	0
4P.16	Total number of sources	BN4843	nr	0	91
4P.17	Number of reuse schemes	BN4857	nr	0	0
4P.18	Total number of water reservoirs	BN10190	nr	0	130
4P.19	Total capacity of water reservoirs	BN10191	MI	0	187926
4P.20	Total number of intake and source pumping stations	W5003	nr	0	94
4P.21	Total number of raw water transport stations	WR001	nr	0	38
4P.22	Total capacity of intake and source pumping stations	W5003CAP	kW	0	13290
4P.23	Total capacity of raw water transfer pumping stations	WR002	kW	0	28778
4P.24	Total length of raw water abstraction mains and other conveyors	BN10290	km	2	22.50
4P.25	Average pumping head – raw water abstraction	BN4861	m.hd	2	11.45
4P.26	Average pumping head – raw water transport	BN4862	m.hd	2	33.02
4P.27	Total length of raw and pre-treated (non-potable) water transport mains	BN4858	km	2	1444.80
4P.28	Water resources capacity (measured using water resources yield)	BN4859	MI/d	2	1650.85

Line description		Bon Code	Unit	DPs	Current year
B - Water treatment					
4P.29	Total water treated at all SW simple disinfection works	CPMW0098	MI/d	2	0.00
4P.30	Total water treated at all SW1 works	CPMW0104	MI/d	2	0.00
4P.31	Total water treated at all SW2 works	CPMW0110	MI/d	2	0.00
4P.32	Total water treated at all SW3 works	CPMW0116	MI/d	2	447.18
4P.33	Total water treated at all SW4 works	CPMW0165	MI/d	2	150.37
4P.34	Total water treated at all SW5 works	CPMW0166	MI/d	2	444.90
4P.35	Total water treated at all SW6 works	CPMW0167	MI/d	2	0.00
4P.36	Total water treated at all GW simple disinfection works	CPMW0027	MI/d	2	0.00
4P.37	Total water treated at all GW1 works	CPMW0033	MI/d	2	0.00
4P.38	Total water treated at all GW2 works	CPMW0039	MI/d	2	62.78
4P.39	Total water treated at all GW3 works	CPMW0045	MI/d	2	30.09
4P.40	Total water treated at all GW4 works	CPMW0185	MI/d	2	95.27
4P.41	Total water treated at all GW5 works	CPMW0197	MI/d	2	64.45
4P.42	Total water treated at all GW6 works	CPMW0198	MI/d	2	0.00
4P.43	Total water treated at more than one type of works	CPMW001A	MI/d	2	0.00
4P.44	Total number of SW simple disinfection works	CPMW0015	nr	0	0
4P.45	Total number of SW1 works	BN10491	nr	0	0
4P.46	Total number of SW2 works	BN10490	nr	0	0
4P.47	Total number of SW3 works	BN10590	nr	0	14
4P.48	Total number of SW4 works	BN10597	nr	0	6
4P.49	Total number of SW5 works	BN10598	nr	0	7
4P.50	Total number of SW6 works	BN10599	nr	0	0
4P.51	Total number of GW simple disinfection works	CPMW0021	nr	0	0
4P.52	Total number of GW1 works	BN10791	nr	0	0
4P.53	Total number of GW2 works	BN10790	nr	0	14
4P.54	Total number of GW3 works	BN10890	nr	0	3
4P.55	Total number of GW4 works	BN10897	nr	0	5
4P.56	Total number of GW5 works	BN10898	nr	0	1
4P.57	Total number of GW6 works	BN10899	nr	0	0
4P.58	Number of treatment works requiring remedial action because of raw water deterioration	W4005	nr	0	1

Table 4P: Non-financial data for WR, WT and WD – wholesale water (continued)

For the 12 months ended 31 March 2019

Line description	Bon Code	Unit	DPs	Current year	
B - Water treatment					
4P.59	Zonal population receiving water treated with orthophosphate	BN10901	000	3	5058.392
4P.60	Average pumping head - water treatment	BN10902	m.hd	2	12.61
C - Water distribution					
4P.61	Total length of potable mains as at 31 March	BN1100	km	1	31790.1
4P.62	Total length of potable mains relined	BN1204	km	1	24.5
4P.63	Total length of potable mains renewed	BN1200	km	1	4.8
4P.64	Total length of new potable mains	BN1208	km	1	140.3
4P.65	Total length of potable water mains (<=320mm)	BN14990	km	1	29439.8
4P.66	Total length of potable water mains >320mm - <=450mm	BN14890	km	1	989.5
4P.67	Total length of potable water mains >450mm - <=610mm	BN14790	km	1	845.9
4P.68	Total length of potable water mains > 610mm	BN14690	km	1	514.6
4P.69	Capacity of booster pumping stations	BN11300CAP	kW	0	70796
4P.70	Capacity of service reservoirs	BN10900CAP	MI	0	2221
4P.71	Capacity of water towers	BN11030CAP	MI	0	30
4P.72	Distribution input	BN1000	MI/d	2	1282.95
4P.73	Water delivered (non-potable)	BN2350	MI/d	2	0.00
4P.74	Water delivered (potable)	BN2330	MI/d	2	1068.76
4P.75	Water delivered (billed measured residential)	BN2000	MI/d	2	297.82
4P.76	Water delivered (billed measured business)	BN2010	MI/d	2	292.11
4P.77	Total leakage	BN2345	MI/d	2	289.77
4P.78	Distribution losses	BN2340	MI/d	2	212.04
4P.79	Water taken unbilled	BN2327	MI/d	2	43.41
4P.80	Number of lead communication pipes	BN11600	nr	0	1270332
4P.81	Number of galvanised iron communication pipes	BN11610	nr	0	1975
4P.82	Number of other communication pipes	BN11620	nr	0	881378
4P.83	Number of booster pumping stations	BN11390	nr	0	531
4P.84	Total number of service reservoirs	BN10990	nr	0	368
4P.85	Number of water towers	BN11090	nr	0	28
4P.86	Total length of potable mains laid or structurally refurbished pre-1880	BB13000	km	1	347.2
4P.87	Total length of potable mains laid or structurally refurbished between 1881 and 1900	BB13010	km	1	1878.1

Line description	Bon Code	Unit	DPs	Current year
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C - Water distribution

4P.88	Total length of potable mains laid or structurally refurbished between 1901 and 1920	BB13020	km	1	845.9
4P.89	Total length of potable mains laid or structurally refurbished between 1921 and 1940	BB13030	km	1	4684.4
4P.90	Total length of potable mains laid or structurally refurbished between 1941 and 1960	BB13040	km	1	8923.1
4P.91	Total length of potable mains laid or structurally refurbished between 1961 and 1980	BB13050	km	1	5155.9
4P.92	Total length of potable mains laid or structurally refurbished between 1981 and 2000	BB13060	km	1	6453.9
4P.93	Total length of potable mains laid or structurally refurbished post 2001	BB13070	km	1	3501.3
4P.94	Average pumping head – treated water distribution	BN4870	m.hd	2	81.26

D - Band Disclosure (nr)

4P.95	WTWs in size band 1	WTW001NR	Nr	0	5
4P.96	WTWs in size band 2	WTW002NR	Nr	0	3
4P.97	WTWs in size band 3	WTW003NR	Nr	0	8
4P.98	WTWs in size band 4	WTW004NR	Nr	0	5
4P.99	WTWs in size band 5	WTW005NR	Nr	0	14
4P.100	WTWs in size band 6	WTW006NR	Nr	0	8
4P.101	WTWs in size band 7	WTW007NR	Nr	0	3
4P.102	WTWs in size band 8	WTW008NR	Nr	0	2

Table 4P: Non-financial data for WR, WT and WD – wholesale water (continued)

For the 12 months ended 31 March 2019

Line description		Bon Code	Unit	DPs	Current year
E - Band Disclosure (%)					
4P.103	Proportion of Total DI band 1	WTW001PN	%	1	0.3%
4P.104	Proportion of Total DI band 2	WTW002PN	%	1	0.7%
4P.105	Proportion of Total DI band 3	WTW003PN	%	1	3.9%
4P.106	Proportion of Total DI band 4	WTW004PN	%	1	4.3%
4P.107	Proportion of Total DI band 5	WTW005PN	%	1	23.3%
4P.108	Proportion of Total DI band 6	WTW006PN	%	1	25.7%
4P.109	Proportion of Total DI band 7	WTW007PN	%	1	17.1%
4P.110	Proportion of Total DI band 8	WTW008PN	%	1	24.8%

Key

 Input cell  Calculation cell

Please refer to RAG 4.08 - Guideline for the table definitions in the annual performance report for the reporting year 2018-2019

Table 4P includes non-financial information in relation to the company water resources, water treatment and distribution. The table also identifies the number and sizes of water treatment works (WTW) held by the company.

Table 4P Lines 1-8. Distribution input derived from various sources

This year's Distribution Input (DI) is comprised from impounding reservoirs, pumped storage reservoirs, river abstractions and groundwater. We have no artificial recharge, aquifer storage and recovery, saline abstractions or water reuse schemes in use.

We have assessed the proportion of total DI this year by first assigning source types to each WTW and then linking these to the reported DI data. We have reviewed each WTW and assigned each one a single source type (impounding reservoir, river abstraction etc). Where multiple sources feed a works, we have followed the guidance which states that multiple source works, where the flow is combined prior to treatment, can be categorised as the more difficult to treat water.

The total DI for each WTW has been obtained by linking to this year's Water into Supply (Distribution Input) report. With each WTW having a single source type, this has enabled the proportion of total DI from each type of source to be estimated.

This year we have carried out a significant review of our sources and some have been re-categorised according to our interpretation of the guidance, which explains the changes to the reported numbers. For example, we have re-categorized some river abstraction as reservoir, and also re-categorized a small number of our reservoirs to be pumped storage reservoirs.

As part of the assessment of sources, the following WTWs have had their source changed (the new source is Water Source 3 below), which explains why river abstraction has reduced and impounding reservoirs has increased.

Asset ID	Reference	Common Name	Source Type	Source Type 2	Water Source	Water Source 3
415305	SAIOOOO2846	CHELLOW HEIGHTS/ WTW	S	S	UPLAND IRE RIVER ABSTRACTION	IMPOUNDING RESERVOIR
413438	SAIOOOO0805	ECCUP/NO 1 WTW	S	S	UPLAND IRE RIVER ABSTRACTION	IMPOUNDING RESERVOIR
414295	SAIOOOO1723	ELVINGTON/WTW	S	S	RIVER ABSTRACTION	IMPOUNDING RESERVOIR
416574	SAIOOOO4382	HEADINGLEY/NO 2 WTW	S	S	UPLAND IRE RIVER ABSTRACTION	PUMPED STORAGE
415130	SAIOOOO2648	INGBIRCHWORTH/2 WTW	S	S	GROUND WATER UPLAND IRE	IMPOUNDING RESERVOIR
416305	SAIOOOO4076	LOFTSOME BRIDGE/ WTW	S	S	RIVER ABSTRACTION	IMPOUNDING RESERVOIR
416664	SAIOOOO4493	THORNTON STWD/ WTW	S	S	UPLAND IRE RIVER ABSTRACTION	PUMPED STORAGE
470792	SAIOO116936	TOPHILL LOW/NO 2 WTW	S	S	RIVER ABSTRACTION	IMPOUNDING RESERVOIR

Table 4P Lines 9-17. Number of impounding reservoirs, pumped storage reservoirs, river abstractions, abstraction schemes and reuse schemes.

This year we have carried out a significant review of our sources and some sources have been re-categorised according to our interpretation of the guidance. This review has meant that we are submitting 10 less sources overall. The number of sources of impounding reservoirs and groundwater sources has reduced, the number of pumped storage reservoirs has increased and there has been no change to the number of river abstractions. The Ofwat guidance specifies abstraction licences in the decision tree for raw water reservoirs, and we have used abstraction licences in defining our sources. In order to apply a consistent approach, we have assessed that:

- Any reservoir, river or groundwater source with its own abstraction licence is a source.
- Any group of reservoirs (or groundwater sources) on a single abstraction licence are a source.

This approach also gives the advantage of being able to match the sources to the reported volumes abstracted, if necessary.

Exceptions:

- Thornton Steward reservoir becomes a new source, even though it does not have its own abstraction licence, because it meets the >15 days storage rule in RAG 4 Appendix 2. This reservoir is a pumped storage reservoir, being supplied from the River Ure at Kilgram Bridge.
- Eccup reservoir becomes a new source, even though it does not have its own abstraction licence, because it meets the >15 days storage rule. Eccup reservoir receives both water pumped from the River Ouse at Moor

Monkton and also from the impounding reservoirs in the Washburn Valley. For this year we have assessed that Eccup reservoir is a pumped storage reservoir because for 2018/2019 the Eccup blend was 61% river water, 39% reservoir.

- Chelker reservoir has an abstraction licence and remains a source, but it changes from an impounding reservoir to a pumped storage reservoir. It has very little catchment of its own and its contents are mainly pumped from the River Wharfe at Lobwood.
- Ardsley reservoir is no longer a source. It does not have its own abstraction licence or catchment and is gravity fed from various licensed reservoirs upstream, which are the sources.
- A few sites with abstraction licences are not classed as sources because they are essentially just streams which supply our impounding reservoirs, and do not feed water treatment works directly.

Comparison with last year's numbers reported numbers.

Line No	2017/2018	2018/2019
9 Number of impounding reservoirs	47	39
10 Number of pumped storage reservoirs	0	3
11 River abstractions	9	9
12 Groundwater	45	40
13 Artificial recharge	0	0
14 ASR	0	0
15 Saline abstraction	-	0
16 Total no. of sources	101	91
17 Reuse schemes	-	0

Table 4P Lines 18-19. Total number and capacity of water reservoirs

This year we have reported a slight reduction in number of water reservoirs. Low Lanshaw, High Lanshaw and Jenny Gill which were previously reported as reservoirs, have been excluded because they are residuums, i.e. an upstream silt trap.

We have reported a slight decrease in capacity of water reservoirs. Snow Hill, Gauge Basin and Seven Arches capacities were previously all estimated with a fixed capacity of 381 MI (based on average of other assets). These have been reviewed and set to a value of 1 MI as they are very small, and not large enough to justify the average of other assets.

Comparison with last year's numbers reported numbers:

Line No	2017/2018	2018/2019
18 Total number of water reservoirs	133	130
19 Total capacity of water reservoirs (MI)	189,089	187,926

Table 4P Lines 20-23. Total number and capacity -pumping stations

In the previous year, all raw water pumping stations (RPS) assets were assigned to Network+ for line 17 and 19 in the 2018 APR. Last year 5 sites were included as water resources - abstraction for pumping head numbers but as Network+ for intake and source and raw water transport numbers/capacities. This year we have applied the same approach across all lines on table 4P.

For 2019 we have an additional 2 RPSs which are classed as water resources – abstraction because they follow the Ofwat guidance for water resource boundaries (green line) from a river to a reservoir source. The large shift from line 23 to 22 is due to the inclusion of these three assets in the water resources source line.

Comparison with last year's numbers reported numbers:

Line No	2017/2018	2018/2019
20 Total number of intake and source pumping stations	96	94
21 Total number of raw water transport stations	42	38
22 Total capacity of intake and source pumping stations (KW)	7,388	13,290
23 Total capacity of raw water transfer pumping stations (KW)	35,227	28,778

Table 4P Lines 24 & 27. Total length or raw water abstraction and transport mains

The lengths of all raw water mains are stored within our Odyssey system, but the system cannot differentiate between sub-types of raw water mains (i.e. abstraction and network plus).

Last year we reported the total raw water mains lengths under raw water abstraction with a total of 1,465.70 km reported, we reported zero km under networks plus, and provided commentary that the separate types of raw water mains were not recorded by our IT system.

For this year we have interpreted the guidance in RAG 4.08 Appendix 2, that river to reservoir transfers should be assessed as raw water abstraction mains.

We have assessed all our river intakes and the following river to reservoir transfer mains have been assessed as raw water abstraction and reported in line 4P.24. These mains lengths have been estimated individually using the Odyssey on-screen measure function.

Kilgram Bridge River Intake to Thornton Steward Res	2.0 km
Kilgram Bridge River Intake to Leighton Res	11.5 km
Arthington River Intake to Eccup Res	7.0 km
Lobwood River Intake to Chelker Res	2.0 km
Total	22.5 km

Other river transfer mains are not included in the above, because they either feed a water treatment works direct or a reservoir of less than 15 days storage, and we interpret that those should be assessed as networks plus mains.

Because our system cannot differentiate between the different types of raw water mains, for line 4P.27 we are estimating the length of networks plus mains using the total raw water mains lengths in Odyssey less the figure reported in line 4P.24.

Comparison with last year's numbers reported numbers.

Line No	2017/2018	2018/2019
24 Total length of raw water abstraction mains and other conveyors (km)	1,465.70	22.5
27 Total length of raw and pre-treated (non-potable) water transport mains (networks plus) (km)	0.00	1,444.80

Table 4P Line 28. Water Resources Capacity

This line represents the company level water resources capacity, as the sum of all company water resource zones (WRZs) across all of its licensed areas. Capacity is measured in terms of water resources yield which captures the average volume of water available from the environment and constrained by water resources control assets.

The data is based on audited WRMP data tables, with appropriate adjustments made to remove constraints associated with pumps, WTW or other asset capacity.

The water resources yield from the base year is assumed to reduce at the same rate as deployable output due to climate change in the WMRP.

Table 4P Lines 29-57. Water Treatment

North Newbald WTW, which is GW2 category works, has not been used in 2018/2019 but is not decommissioned. This year this works is included, because we interpret that even though the works has not been in use it could be if required, therefore should be reported.

Irton WTW, is now a GW4 category works, previously GW3, due to a capital scheme to install a new treatment process for Granular Activated Carbon filters.

Table 4P Line 58. Treatment works requiring remedial action because of raw water deterioration

In 2018/2019, one treatment works requiring remedial action was planned and delivered. This was Irton Water Treatment Works (WTW). The planned scheme at Irton WTW, due by 31/12/2018, was successfully completed on 23/11/2018.

Table 4P Line 59. Zonal Population receiving water treated with Orthophosphate

Orthophosphate is dosed at the treatment works to reduce plumbosolvency. Plumbosolvency is the ability of a solvent, notably water, to dissolve lead. Plumbosolvent water can cause damage to lead pipes. We counteract this by adding phosphate at our water treatment works, which forms a protective coating to the inside of lead pipes.

Table 4P Line 25, 26, 60 and 94. Average Pumping Head abstraction, transport, and treatment

We have assessed the Arthington, Kilgram Bridge and Lobwood river intakes as raw water abstraction in accordance with RAG 4.08 guidance. The assessment of boreholes between raw water abstraction and networks plus, uses the same assumptions as last year, and we intend to carry out further assurance in this area in the future to keep it up to date.

The movement of the three river intakes has resulted in a large increase in line 25 due to the fact that these are large volume pumping stations which were heavily utilised in last year's dry weather conditions.

The increase seen in line 26 has been due to the fact that a number of pumping stations were utilised during last year's dry weather conditions to support the water resource situation regionally.

The increase in line 60 was a result of the inclusion of interstage pumping at WTWs, following a review of new capital schemes and existing data. This assurance was carried out by technical experts within the business. In addition, this data was also impacted by last year's dry weather.

The weather conditions last year which impacted on line 94 were the Beast from the East (March 2018) and the long dry summer which caused exceptionally high demand (June to August 2018).

On smaller band sizes where actual head data is not available, an average has been used based on the pump capacity. The percentage of estimated data used for the pumping head data is as follows:

Line 25 Raw water abstraction	30.56%
Line 26 Raw water transport	32.79%
Line 60 Water Treatment	0%
Line 94 Water Distribution	41.71%

Yorkshire Water's method differs slightly from the Ofwat guidance in that the Vp and Vg figures are not measured separately, instead the total volume entering each price control is calculated using raw water source abstraction and WTW flow meters. The meters provide the total volumes entering the price control, irrespective of whether the volume is gravitated or pumped.

We recognise that the data needs to be improved therefore we will be carrying out a review of all the data and procedures over the next 12 months. We will also implement regular routine data checks throughout the year, so that any data issues can be flagged and resolved at an early stage.

Table 4P Line 61. Total length of potable mains as at 31 March

The corporate GIS (Odyssey) records hundreds of thousands of pipes. Each pipe has a length associated with it. It also has other attributions such as owner name, whether it's live or abandoned and whether it is carrying raw or treated water. Using a cut of this data (taken at the start of April 2019) we used an application called FME to analyse and filter this data and ultimately produce a figure for the APR. Over 2017/2018 the network grew in Odyssey by 79km. This year (2018/2019) it has grown by 97km. This increase probably reflects the increase in our team resources (i.e. the number of people skilled enough to add pipes to the Odyssey GIS and our ability to get through more of the backlog of Statutory Main laying Schemes.

Table 4P Lines 62-63. Total length of potable mains renewed or relined

Mains Relined – 24.5km. This is an increase on previous years reported total (15.4km). This increase is associated with the use of 3m 2400 Lining Material which is a structural liner, this delivers the same benefits as renewal.

New Mains – The length of new mains laid during the year has increased. This is linked to asset management capital schemes for new mains laid to increase capacity and future proof the network plus the upturn in developer activity and the Government Housing and Communities Agency driving the scale and pace of construction to balance the demand for new homes.

Replaced / Renewed – 4.8km. A reduction on previous year (25.6km). Reduction associated with the increase in lining.

Lead - The bulk of lead jobs were completed within Years 1 and 2 of AMP6, work completed subsequently is the result of highways embargos being lifted. Of the 603 replacements, 588 have been completed at the customer's request and 15 on sites previously embargoed.

Table 4P Line 64. Total Length of new potable mains

This data is made up of both requisition and self-lay mains which has been laid under the statutory main laying scheme for year 4 2018/2019. The ratio of main laying has remained consistent throughout the AMP at an average of 61:39 requisition to self-lay.

The length of new mains laid in 2018/2019 is 119.57km, this compares with 91.18km in 2017/2018.

There has been a 31% increase in the length of new mains laid in comparison to last year and this increase is equally consistent across both requisition and self-lay.

This increase supports industry predictions for growth which suggested a continued steady rise in new-builds for 2018/2019.

The housing market has significantly improved since the end of AMP5 and has continued to improve throughout AMP6 resulting in increased developer activity.

Main laying is customer driven and the overall length of new mains laid during 2018/19 is in-line with industry predictions and the Final Determination (FD) number (100.57km). In years 1-4, the overall total is currently 18% higher than the FD.

Table 4P Lines 65-68. Length of Potable Water Mains

The corporate GIS (Odyssey) records hundreds of thousands of pipes. Each pipe has a length associated with it. It also has other attribution such as the diameter. Using a cut of this data (taken at the start of April 2019) we used an application called FME to analyse and filter this data and ultimately produce a figure for APR which shows the length/percentage makeup of the diameter of Yorkshire water's Live mains carrying treated water. The relatively tiny amount of pipework we add each year means that these percentages stay more or less the same. The vast majority of the yearly growth occurs in the less than 320mm diameter category.

Table 4P Lines 69 & 83. Capacities of reservoirs and water towers and water delivered

The number of pumping stations have changed since the last reporting year by an increase of one, however the capacity of these has slightly decreased due to the replacement of pumps and better information (70,796kW).

The new pumping station is Stansfield View WPS. The capacity of this asset is small so it didn't influence the overall capacity figure.

Table 4P Lines 70, 71, 84 & 85. Capacities & Total numbers of service reservoirs Water towers

There are 368 service reservoirs in 2018/2019, this figure is the same as the previous year. This is also the case for the capacity at 2,221MI in both reporting years.

There are 28 Water Towers in 2018/2019, this figure is the same as the previous year. The capacity has reduced by 2MI. The change is due to Swanland WTR which is a capacity change of 2MI compared to the previous reporting year.

Table 4P Line 72. Distribution Input

Distribution input is the average amount of potable water entering the distribution system. The data has been obtained from the company's 'Water into Supply' database. Water into Supply data are produced monthly, giving details of water treatment works outputs and demands within the regional forecasting zones.

Average Distribution Input is 11MI/d (0.9%) greater in 2018/2019 than in the previous report year. This is due to high customer demand in the prolonged warm, dry summer months, particularly June and July 2018 and high leakage levels in the first months of the report year following the impact of the 'Beast from the East' in March 2018.

Table 4P Line 73. Water delivered (non-potable)

This line is reported as zero. As in previous years, we do not provide any non-potable supplies to either household or non-household customers.

Table 4P Line 74. Water delivered (potable)

This line reports all potable water supplied. This includes the estimated water delivered to billed measured and unmeasured household and non-household customers and an estimate of water taken unbilled. The reported volume of water delivered includes estimates of consumption, water lost through supply pipe leakage and meter under registration for household and non-household meters.

In the report year the total volume of potable water delivered has increased by 19MI/d. This is primarily due to increased water delivered to non-household customers in Summer 2018 and a small increase in water taken unbilled (metered standpipe use and water use in occupied void properties).

Table 4P Line 75. Water delivered (billed measured residential properties)

The average volume of water delivered to billed measured households has increased in the report year by 17.5MI/d (6.3%). This is due to new household properties connected in the year and unmeasured households opting for a metered supply (domestic meter optants). There is a corresponding decrease in water delivered to unmeasured households as the number of these properties decreased in the year.

Table 4P Line 76. Water delivered (billed measured businesses)

The average volume of water delivered to billed measured non-households has increased in the report year by 19MI/d (5.8%). Increased use by measured non-household customers was observed in Summer 2018 and is believed to be due to increased manufacturing as a result of increased demand for certain food and drink products in the extremely warm and dry months.

Table 4P Line 77-78. Total leakage and distribution losses

Total leakage and distribution losses have decreased in the report year compared to the previous year due to increased resources allocated to find and fix activity and continued network optimisation. Please see Section 4 of this APR for further detail on leakage. Leakage is one of our performance commitments.

Table 4P Line 80. Number of lead communication pipes

The number of lead communication pipes has remained low compared to earlier in the AMP as our lead replacement programme comes to an end. The AMP6 lead replacement programme peaked in 2016/2017. Only ad-hoc replacement of lead communication pipes now occurs on a customer by customer basis.

A similar number of replacements in Year 5 of the AMP is expected. In AMP7 a new lead replacement programme is forecast targeting hotspot DMA's, schools and nurseries.

Table 4P Line 81. Number of galvanised iron communication pipes

The number of galvanised iron communication pipes has decreased higher than previous years, this is down to a drive on active leakage reduction and targeted communication with customers whose pipes may have burst. In addition, we do not lay galvanised iron anymore, however where it is unknown what material type from the existing dataset has been replaced, a proportional reduction based upon that materials overall contribution to the total has been used, reducing the number of galvanised iron communication pipes year on year through a natural rate of replacement.

Table 4P Line 82. Number of other communication pipes

The number of other communication pipes is made up of alkathene, copper, Medium Density Polyethylene (MDPE) and cast iron. This number of pipes has increased as expected based on the fact all new and replacement communication pipes are replaced with MDPE. Alkathene, copper and cast iron will be reducing year on year. Growth resulting in new properties connected as well of replacement communication pipes is taken into account in this measure.

Table 4P Lines 86-93. Lengths of mains laid or refurbished

The corporate GIS (Odyssey) records hundreds of thousands of pipes. Each pipe has a length associated with it. It also has other attribution such as the date each pipe was laid or rehabilitated. Using a cut of this data (taken at the start of April 2019) we used an application called FME to analyse and filter this data and ultimately produce figures for the APR which shows that the vast majority (75%) of Yorkshire Water's live pipes carrying treated water were laid after 1940. It is also showing us that mains laid before 2000 are slowly being abandoned and/or replaced or rehabilitated using the Structural Hi-Build (191.5km so far) method. The size of the existing network compared to what we add each year means that there is very little year on year change across the age categories. We expect this to continue at a steady pace.

Table 4P Lines 95-110. Band disclosures

We have calculated the number of WTWs in each Band by using a Look Up linked to the Distribution Input data (Water into Supply report), which has a total volume of DI for each WTW. A simple formula has then been applied within a spreadsheet to determine which band each WTW is in and the percentage DI for each WTW.

Austerfield WTW increased output from 7.97 MI/d in 2017/2018, to 10.03 MI/d in 2018/2019 moving it from Band 3 to Band 4.

Table 4Q – Non-financial data - properties, population and other - wholesale water

For the 12 months ended 31 March 2019

Line description		Bon Code	Unit	DPs	Current year
A - Properties and population					
4Q.1	Residential properties billed for measured water (external meter)	BN2110	000	3	718.405
4Q.2	Residential properties billed for measured water (not external meter)	BN2115	000	3	407.471
4Q.3	Business properties billed measured water	BN2210	000	3	106.760
4Q.4	Residential properties billed for unmeasured water	BN2100	000	3	938.908
4Q.5	Business properties billed unmeasured water	BN2200	000	3	13.660
4Q.6	Total business connected properties at year end	BN2221	000s	3	141.476
4Q.7	Total residential connected properties at year end	BN2161	000s	3	2177.689
4Q.8	Total connected properties at year end	BN1001	000	3	2319.165
4Q.9	Number of residential meters renewed	BN1765	000	3	3.716
4Q.10	Number of business meters renewed	BN1767	000s	3	1.625
4Q.11	Number of meters installed at request of optants	BN1715	000	3	28.179
4Q.12	Number of selective meters installed	BN1711	000	3	0.000
4Q.13	Total number of new business connections	BP3405	000	3	1.027
4Q.14	Total number of new residential connections	BP3400	000	3	14.037
4Q.15	Total population served	BN2590	000	3	5058.392
4Q.16	Number of business meters (billed properties)	BN11630	000	3	106.653
4Q.17	Number of residential meters (billed properties)	BN11640	000	3	1145.569
4Q.18	Company area	SYS03	km2	0	14294
B - Other					
4Q.19	Number of lead communication pipes replaced for water quality	BN1231	nr	0	603
4Q.20	Total supply side enhancements to the supply demand balance (dry year critical / peak conditions)	W3007SO	MI/d	2	0.00
4Q.21	Total supply side enhancements to the supply demand balance (dry year annual average conditions)	W3008SO	MI/d	2	5.00
4Q.22	Total demand side enhancements to the supply demand balance (dry year critical / peak conditions)	W3007DO	MI/d	2	0.00
4Q.23	Total demand side enhancements to the supply demand balance (dry year annual average conditions)	W3008DO	MI/d	2	0.00
4Q.24	Energy consumption - network plus	BM902ECNP	MWh	0	302639
4Q.25	Energy consumption - water resources	BM902ECWR	MWh	0	42133
4Q.26	Energy consumption - wholesale	BM102ECWW	MWh	0	344772
4Q.27	Mean Zonal Compliance	QEBW0180	%	2	99.96%
4Q.28	Compliance Risk Index	QEBW0183	nr	1	1.9
4Q.29	Event Risk Index	QEBW0184	nr	1	57.2

Line description		Bon Code	Unit	DPs	Current year
4Q.30	Volume of Leakage above or below the sustainable economic Level	BN2341	MI/d	3	-2.330

Key

 Input cell  Calculation cell

Please refer to RAG 4.08 - Guideline for the table definitions in the annual performance report for the reporting year 2018-2019

Table 4Q provides non-financial data related to properties, population and other wholesale water services. It provides information on the number of residential and business properties supplied with water and the estimated population. It also includes, the number of new connections and meters installed in 2018/2019. Energy consumption is presented for the water resources and network components of upstream water services. There is also additional operational information related to water quality and maintaining secure supplies to our customers.

Table 4Q Lines 1-2. Total Households billed for measured water (external meter and internal meter)

The proportion split between external and internal meters remains at 64:36 ratio. This is in line with previous years submissions.

Table 4Q Line 3. Non- Household billed measured Water

This is an average number of non-household (NHH) premises billed for measured water across this reporting period. The total number of billed properties has decreased by 1.02% compared with the previous year. This is primarily driven by a greater number of properties being de-registered from the NHH market versus that which is offset by the number of new connections. The reduction is proportionally akin to that reported in APR 18.

Table 4Q Line 4. Residential properties billed for unmeasured water

The unmeasured billed properties have reduced from 968,051 in 2017/2018 to 938,908 in 2018/2019, this 3% reduction is in line with prior years and corresponds with the increase in measured properties.

Table 4Q Line 5. Non-Households billed unmeasured water

This is an average number of non-household premises billed for unmeasured water across the period of 01/04/2018 to 31/03/2019 inclusive. The total number of billed properties has decreased by 1,182 compared with the previous year. This is primarily driven by two factors. Firstly, there is an ongoing series of works by Yorkshire Water to replace unmeasured connections with metered connections which has led to an overall reduction in the number of unmeasured supplies within the supply area. Secondly, there has been an increase in the number of vacant premises. Year on year, vacant unmeasured properties have increased by 416 compared to the APR18 submission.

Table 4Q Line 6. Total non-household connected properties at year end

This is a snapshot, as of 31/03/2019, of all connected properties classified as non-household, regardless of occupancy status. The year on year variance since APR18 shows a reduction in the number of connected properties of 477 which correlates with the overall incidence impact of the number of deregistration's being greater than the number of new connections.

Table 4Q Line 7. Total residential connected properties at year end

This is the total number of properties connected at year end. This has increased from 2,163,365 in 2017/2018 to 2,177,689 in 2018/2019. The movement of 14,324 represents an overall increase of 0.7% increase. This is in line with previous years increases.

Table 4Q Line 8. Total connected properties at year end

Line 8 is a sum of lines 6 and 7.

Table 4Q Lines 9-10. Number of meters installed

Yorkshire Water owns over 1.3m revenue meters installed for measuring consumption of both domestic (90%) and commercial (10%) consumers. This asset base is increasing each year through the Domestic Meter Optants Scheme and the New Fixes process. These meters have an estimated asset life of 15 years.

We have invested in each AMP to maintain our current meter stock by:

Replacing asset life expired (circa 15 years +) where capital funding has been available

Replacing damaged meters when required

As metering coverage grows so does the level of base maintenance in these assets.

The number of residential meters renewed has decreased by 85% this year as we have made a decision to only proactively exchange meters until the end of the AMP. Only those meters deemed a health & safety risk are proactively replaced. The number of business meters renewed has also decreased by 13%. We expect a similar outturn for 2019/2020. Our focus is now on leakage initiatives and therefore only reactive meter exchanges are being undertaken until the end of the AMP.

Table 4Q Lines 11-12. Numbers of meters installed at request of optants and number of selective meters installed

The number of domestic meter optants actually installed during 2018/2019 has increased marginally (circa 1%) to 28,179. This is short of the final determination figure of 42,000 and the forecast set out at the start of the year. Demand at the start of the year was strong and April 2018 saw a 46% increase in fits compared to 2017/2018, with a 5% increase in May. However, June through to September saw decreased installation numbers compared with the previous year, this coincided with the period of exceptionally hot and dry weather.

In January 2019, a decision was taken to roll out the 'Best for You' initiative to all 848,000 unmeasured customers during annual billing. This meant all customers received a bill outlining their current unmeasured cost against the average cost of those with a meter, it also included a commitment to monitor their bill and to offer a switch back to unmeasured if there is no benefit. This, coupled with an average 4.2% bill increase, has led to a large increase in demand.

Since 11 February 2019 to 14 April 2019, we have received 22,801 Domestic Meter Optants (DMO) requests compared to 11,723 over the same period last year – a 95% increase. The expectation is that demand will return to normal levels following the annual billing period, so the current full year forecast for 2019/2020 is 40,000 DMO fits.

Table 4Q Line 13. Total number of new non-household connections

This figure shows all new connections to the Yorkshire Water network between 01/04/2018 and 31/03/2019. There has been an overall increase of new connections to the network of 127 connections compared with our APR18 submission. This follows expectations as mentioned in line 4Q.5 where unmeasured non-household properties are being connected to the network as measured properties.

Table 4Q Line 14. Total number of new residential connections

We have reported 14,037 new residential connections in 2018/2019, this is consistent with the number of new connections that we have seen over the last three years.

Table 4Q Line 15. Total population served

Line 15 presents the estimated total resident population served by Yorkshire Water for water services in the report year. It includes billed households supplied with unmeasured and measured water and billed businesses supplied with unmeasured and measured water. The water population for 2018/2019 has been estimated from average property numbers multiplied by occupancy rates for measured and unmeasured households and unmeasured non-households plus the estimated communal (measured non-household) population for the year.

Average billed property numbers for the report year for measured households, unmeasured households and unmeasured non-households are obtained from the billing file. These are multiplied by estimated occupancy rates for the different property categories to give estimated populations. The occupancy rates used were determined through customer research undertaken for the Water Resources Management Plan 2014 (WRMP14). The estimated populations are then added to the reported communal population (measured non-household population) from the 2011 Census to give the total population.

Total population has increased in the report year by 13,000 (0.25%) and is forecast to increase in AMP6 and AMP7.

Table 4Q Line 16. Number of non-household meters (billed properties)

This is a snapshot of occupied premises with meters as of 31/03/2019. There is a small increase of 94 compared with the APR18 submission. There has been a change to the reporting guidance for APR2019 to exclude vacant premises.

Table 4Q Line 17. Number of residential meters (billed properties)

We have noted the change in the reporting requirement from 2017-2018 and have excluded void properties.

The equivalent number in 2017/2018 would have been 1,105,346. The value in 2018-2019 is 1,145,569 which is an increase of 40,223 – 3.6%.

Table 4Q Line 18. Company Area

Spatial data associated to Yorkshire Water's assets and regions are defined within a variety of datasets within the corporate GIS application. Company Area (water supply) is calculated based on the Yorkshire Water Clean Water Area dataset within this GIS application. We have reviewed the procedure for estimating this number and as a result have revised the reported number this year.

Table 4Q Line 19. Number of lead communication pipes replaced or water quality

The bulk of lead jobs were completed in Years 1 and 2 of AMP6, work completed subsequently is the result of highway embargos being lifted. In total there were 15 connections completed by Asset Solutions, all on project R/1475.

Table 4Q Lines 20-23. Total supply side and demand side enhancements to the supply demand balance (dry year critical / peak conditions and dry year annual average conditions)

The planned supply-side and demand-side enhancements for 2018/2019 are detailed in the Water Resources Management Plan 2014 (WRMP14). These lines refer to

any planned supply and demand investment solutions in the WRMP to meet a forecast deficit e.g. new resources (supply-side), additional leakage reduction (demand-side) in the report year.

In WRMP14 a supply demand forecast was produced for a dry year annual average scenario for both the Grid Surface Water Zone (SWZ) and East SWZ. A dry year critical period scenario forecast was also produced for the East SWZ. No dry year critical period scenario was required for the Grid SWZ due to the conjunctive water use within this zone.

In WRMP14 we forecast a supply demand deficit for the annual average scenario in the Grid SWZ in 2018/2019. To meet this deficit a supply side enhancement was planned in the form of a 5Ml/d reduction in leakage through additional find and fix activity.

No supply demand deficit for either the dry year or critical period planning scenarios was forecast for the East SWZ.

Therefore in 2018/2019 line 21 is reported as a 5Ml/d supply side enhancement and lines to 20, 22 and 23 are reported as zero.

Table 4Q Lines 24-26. Energy Consumption

Due to the nature of water treatment, the overall final number is very heavily influenced by the weather. If the winter is colder than average more gas will be required for heating and if there is a particularly dry year it will result in additional electricity consumption as a result of grid pumping.

The overall consumption of electricity for both network+ and water resources has increased this year. Yorkshire Water has continued its focus on energy reduction throughout the business, including monitoring of multiple key parameters, as well as the implementation of energy efficiency schemes. Despite this an exceptionally dry summer has led to the need for large amounts of grid pumping to be carried out.

With such low rain fall and reservoir stocks dropping, drought management plans had to be put in place. This included maximising the extraction of energy intensive water sources such as rivers and the need to pump across the region to balance supply and demand.

Natural Gas and Gas Oil have both seen a decline in 2018/2019, given they are only used for the heating buildings, the reduction is a result of favourable weather.

Transportation - At a company level transportation consumption has increased due to business need. This will vary annually based upon staff locations and operational issues. Further work has been carried out to refine the energy splits for third party activities, it was determined that no allocation should be made for water resource. After detailing the work that has been carried out by our third party partners the relevant shift between boundaries from last year can be seen below:

	Water KWH	
	Water Resources	Network Plus
2017/18 transport percentage breakdown in relation to the company total	12%	12%
2018/19 transport percentage breakdown in relation to the company total	9%	33%

Table 4Q Line 27. Mean Zonal Compliance

This is a performance commitment and so a detailed explanation of performance is provided in Section 4 of this APR.

Table 4Q Line 28. Compliance Risk Index (CRI)

Compliance Risk Index (CRI) is a measure that has been used by the Drinking Water Inspectorate (DWI) over the past 2 years. Water quality is independently measured by the DWI to provide reassurance that water supplies are safe and drinking water quality is acceptable to consumers. The provisional CRI score for 2018 from DWI is 1.9 compared with 4.6 for 2017. CRI scores are published by the DWI in the Chief Inspector's Report, which will be published in July 2019. DWI calculated values are used whenever available in APR documentation.

The key difference in 2018 was the absence of any detections for metaldehyde and a much smaller contribution from WSZ coliform detections. Both phenomena are likely to be partially related to the exceptionally dry weather conditions.

Table 4Q Line 29. Event Risk Index (ERI)

Provisional ERI score for 2018 from DWI is 57.2, compared with 13.9 for 2017. ERI scores are published by the DWI in the Chief Inspector's Report, which will be published in July 2019. DWI calculated values are used whenever available in APR documentation.

Performance in 2018 deteriorated in comparison to 2017. The larger the number of customers impacted by an event the larger the impact under ERI. The relatively large number of relatively widespread impacting discolouration of supply events resulted in the deterioration in ERI value in 2018.

Table 4Q Line 30. Volume of leakage above or below the sustainable economic level

This line presents the variance between actual leakage and the sustainable economic level of leakage. The sustainable economic level of leakage (SELL) for 2018/2019 is detailed in the Water Resources Management Plan 2014. The actual volume of leakage in 2018/2019 is reported in Table 3A and Table 4P line 77 of the APR.

Actual leakage (289.9Ml/d) was less than the estimated SELL value for the year (292.1Ml/d) and the variance from SELL is reported as a positive value.

Table 4R – Non-financial data - wastewater network and sludge - wholesale wastewater

For the 12 months ended 31 March 2019

Line description	Bon Code	Unit	DPs	Current year	
A - Wastewater network					
4R.1	Connectable properties served by s101A schemes completed in the report year	S4002	nr	0	0
4R.2	Number of s101A schemes completed in the report year	S4002A	Nr	0	0
4R.3	Total pumping station capacity	S4029	kW	0	70595
4R.4	Number of network pumping stations	S6019	nr	0	2513
4R.5	Total number of sewer blockages	BN13522	nr	0	33470
4R.6	Total number of gravity sewer collapses	BN13521	nr	0	355
4R.7	Total number of sewer rising main bursts / collapses	BN13520	nr	0	98
4R.8	Number of combined sewer overflows	CPMS2005	nr	0	2061
4R.9	Number of emergency overflows	CPMS2004	nr	0	604
4R.10	Number of settled storm overflows	CPMS2014	nr	0	187
4R.11	Sewer age profile (constructed post 2001)	BB2370	km	0	2197
4R.12	Volume of trade effluent	CPMS2012	MI/yr	2	21304.19
4R.13	Volume of wastewater receiving treatment at sewage treatment works	CPMS2015	MI/yr	2	610263.92
4R.14	Length of gravity sewers rehabilitated	BN13519	km	0	28
4R.15	Length of rising mains replaced or structurally refurbished	BN13523	km	0	1
4R.16	Length of foul (only) public sewers	BN13524	km	0	5351
4R.17	Length of surface water (only) public sewers	BN13525	km	0	7499
4R.18	Length of combined public sewers	BN13526	km	0	16266
4R.19	Length of rising mains	BN13527	km	0	1263
4R.20	Length of other wastewater network pipework	BN13534	Km	0	354
4R.21	Total length of "legacy" public sewers as at 31 March	BN13535	Km	0	30732
4R.22	Length of formerly private sewers and lateral drains (s105A sewers)	BN13528	km	0	21560

Key

 Input cell  Calculation cell

Please refer to RAG 4.08 - Guideline for the table definitions in the annual performance report for the reporting year 2018-2019

Line description		Bon Code	Unit	DPs	Current year
B - Sludge					
4R.23	Total sewage sludge produced, treated by incumbents	BP05613	ttds/year	1	130.2
4R.24	Total sewage sludge produced, treated by 3rd party sludge service provider	MP05614	ttds/year	1	16.7
4R.25	Total sewage sludge produced	MP05611	ttds/year	1	146.9
4R.26	Total sewage sludge produced from non-appointed liquid waste treatment	MP05613	ttds/year	1	5.2
4R.27	Percentage of sludge produced and treated at a site of STW and STC co-location	MP05615	%	2	81.64%
4R.28	Total sewage sludge disposed by incumbents	BN1623	ttds/year	1	88.7
4R.29	Total sewage sludge disposed by 3rd party sludge service provider	BN1622	ttds/year	1	16.5
4R.30	Total sewage sludge disposed	BN1621	ttds/year	1	105.2
4R.31	Total measure of intersiting 'work' done by pipeline	BN1640	ttds*km/year	0	0
4R.32	Total measure of intersiting 'work' done by tanker	BN1641	ttds*km/year	0	804
4R.33	Total measure of intersiting 'work' done by truck	BN1642	ttds*km/year	0	4200
4R.34	Total measure of intersiting 'work' done (all forms of transportation)	BN1643	ttds*km/year	0	5004
4R.35	Total measure of intersiting 'work' done by tanker (by volume transported)	BN1644	m3*km/year	0	29236120
4R.36	Total measure of 'work' done in sludge disposal operations by pipeline	BN1648	ttds*km/year	0	0
4R.37	Total measure of 'work' done in sludge disposal operations by tanker	BN1645	ttds*km/year	0	6
4R.38	Total measure of 'work' done in sludge disposal operations by truck	BN1646	ttds*km/year	0	6377
4R.39	Total measure of 'work' done in sludge disposal operations (all forms of transportation)	BN1647	ttds*km/year	0	6383
4R.40	Total measure of 'work' done by tanker in sludge disposal operations (by volume transported)	BN1649	m3*km/year	0	152903
4R.41	Chemical P sludge as percentage of sludge produced at STWs	MP05616	%	2	3.47%

Table 4R Lines 1-2. Connectable properties served by s101A schemes completed in the report year and number of s101A schemes delivered in the report year

First Time Sewerage Section 101a is a mechanism for the public to obtain a public sewerage system. Line 1 being the number of properties connected to the public sewer network via a s101a scheme. Line 2 being the number of S101a schemes completed within the last 12 months.

On application an assessment is made to determine if the application meets the requirements of S98. Historically only 2 to 3 S101a are undertaken per AMP within the Yorkshire Water Sewerage area. No S98 schemes have been completed or been considered with in the last 12 months.

Table 4R Line 3. Total pumping station capacity

This measure has increased in 2018/2019 to 70,595 from 70,022 in 2017/2018. This is a change of 0.8%. The change can be accounted for in improved information on some of the transferred assets associated with 22 private pumping stations updated into the asset base in 2018/2019.

Table 4R Line 4. Number of network pumping stations

This measure has seen an increase in 2018/2019 to 2,513 from 2,488 in 2017/2018, a change of 0.01%. The change can be accounted for in improved information on some of the transferred assets associated with 22 private pumping stations updated into the asset base in 2018/2019 and improved information on our existing asset base.

Table 4R Line 5. Total number of sewer blockages

This measure has increased in 2018/2019 to 33,470 from 30,611 in 2017/2018, a change of 9%. Performance in 2017/2018 was historically low. Performance in 2018/2019 is similar to that seen in 2016/2017.

Table 4R Line 6. Total number of gravity sewer collapses

The total number of sewer collapses on the legacy and transferred network assets has increased by 36% from 261 in 2017/2018 to 355 in 2018/2019. However, it is in line with performance in this AMP with the average performance for the 3 years being 313.

Table 4R Line 7. Total number of sewer rising main bursts

The total number of sewer rising main bursts on the legacy and transferred network assets has increased by 4% from 94 in 2017/2018 to 98 in 2018/2019. The number identified from the transferred assets has increased to 10. This has been a low level in previous years (5 in 2016/2017 and 0 in 2017/2018). The increase could be related to better information relating to the pumping stations that have become part of the asset base. However, it is in line with performance in this AMP with the average performance for the 3 years being 84.

Table 4R Line 8. Number of combined sewer overflows

This measure has seen a 3.5% reduction to 2,061 in 2018/2019 from 2,113 in 2017/2018. This change is associated with an improved data set on consented overflows. The asset base has seen 131 new sites compared to 2017/2018 and an additional 59 sites have been removed.

Table 4R Line 9. Number of emergency overflows

This measure has increased in 2018/2019 to 604 from 580 in 2017/2018, a change of 4%. This is in line with previous years changes and is due to improved information about the asset base.

Table 4R Line 10. Number of settled storm overflows

This measure has increased in 2018/2019 to 187 from 170 in 2017/2018 a change of 10%. This change is associated with an improved data set on consented overflows. The asset base has seen 25 new sites compared to 2017/2018 and an additional 9 sites have been removed.

Table 4R Line 11, 14 and 15. sewer age profile, length of gravity sewers rehabilitated and length of rising mains replaced or structurally refurbished

To increase the asset line life of our sewer rising mains, we often use structural refurbishing techniques. This involves adding a lining material which improves the structural integrity and in turn extends the expected service life of the pipes.

Length of sewer renovated or replaced in the year is 27.84km increasing 4.79km on last years reported total (23.04km).

Length of rising main replaced or refurbished in the year is 0.95km increasing 0.49km on the previous years reported total of 0.46km.

The overall length of sewer replaced/renovated has increased this year. This increase primarily consists of lengths of sewer lined, with an additional 4km of sewer lined on the R&M Block Schemes compared to last year. This increase is linked to a drive to resolve more issues proactively, reduce repeat issues and remove the number of risks held across our sewer system. The length of sewer physically replaced has remained relatively stable.

Table 4R Line 12. Volume of trade effluent

Volume of trade effluent is representative of the foul trade volume received at waste water treatment works from consented traders across the business over a 12 month period. For all trade effluent discharges, Yorkshire Water are obliged to provide the volume of trade effluent discharged in the reporting year.

As trade effluent data can take a while to be billed, it has been a long-standing agreement that we report data for the 12 months ending September of the previous year. This is consistent with previous APR returns.

When compared to APR18 there has been a 15.15% increase in total trade volumes received.

Changes within industry have played a part in the reported increase. Dependent upon the specific traders involved, volume and load can move differently.

We have observed that some traders have increased the scale of their operations. In 2018 Yorkshire Water had 5 instances of STW failures due to the direct impact of unconsented or excessive trade activity entering the works (2 of these were successfully challenged). Traders are consented to operate within prescribed limits, but when trade activity increases these limits can be breached, which can have an impact on the loads received at treatment works.

Table 4R Line 13. Volume of wastewater receiving treatment at sewage treatment works

Volume of wastewater receiving treatment at sewage treatment works is calculated as the flow receiving treatment at sewage treatment works reported to the Environment Agency (MCERT consent condition) plus an estimate for the additional flow for all remaining works (typically those with a population equivalent of less than 250). This will include, where applicable, foul flows, surface and highway drainage and infiltration – but not storm discharges.

This is a total annual figure and is taken for the financial year. For APR19 Yorkshire Water are reporting 610 sewage treatment works, of which 302 of these have a measured volume from an MCERT device. When comparing this year's reported value to APR18 there is an 8.02% overall decrease in treated volumes.

This decrease was anticipated due to the extremely dry summer in 2019 and overall dry 2018/2019 financial year. This change is validated by other observations, including a significant reduction in sites exceeding their dry weather flow permit in 2018 compared to 2017. The flow data reported in Table 4O Line 10 for the larger works also showed an overall reduction.

Appropriate cross checks have been made to ensure the correct number of sites are being accounted for and there is no double counting of flows.

Table 4R Line 16. Length of foul (only) public sewers

This measure has increased in 2018/2019 to 5,351 from 5,348 in 2017/2018, a change of 0.05%. The changes are largely due to improved information about our existing asset base rather than the creation of new assets.

Table 4R Line 17. Length of surface water (only) public sewers

This measure has increased in 2018/2019 to 7,499 from 7,484 in 2017/2018, a change of 0.2%. The changes are largely due to improved information about our existing asset base rather than the creation of new assets.

Table 4R Line 18. Length of combined public sewers

This measure has increased in 2018/2019 to 16,266 from 16,262 in 2017/2018, a change of 0.02%. The changes are largely due to improved information about our existing asset base rather than the creation of new assets.

Table 4R Line 19. Length of rising mains

This measure has increased in 2018/2019 to 1,263 from 1,255 in 2017/2018, a change of 0.06%. The change can be accounted for in improved information on some of the transferred assets associated with 22 private pumping stations updated into the asset base in 2018/2019. The remaining change is due to improved information about our existing asset base rather than the creation of new assets.

Table 4R Line 20. Length of other wastewater network pipework

This measure has reduced from 355 to 354 in 2018/2019, a change of 0.28%. The changes are largely due to improved information about our existing asset base.

Table 4R Line 21. Total length of 'legacy' public sewers as at 31 March

This measure has increased in 2018/2019 to 30,732 from 30,703 in 2017/2018, a change of 0.09%. The changes are largely due to improved information about our existing asset base.

Table 4R Line 22. Length of formerly private sewers and lateral drains (s105a)

This remains unchanged from the figure reported at transfer of assets in 2011. The total length of these assets mapped and confirmed is 2.452 km- 0.01% of total.

Table 4R Line 23-25. Total sewage sludge produced

These lines break down the total sludge treated, by what has been treated by incumbents and what has been treated by third parties. We have been able to treat more sludges ourselves through our own assets than forecast in the final few weeks of the year. We are currently bringing our Knostrop treatment facility on line, a major investment delivering one of our largest regional treatment assets.

Less sludge was treated by incumbents this year than last year due to third party treatment methods being used for raw cake stocks rather than land restoration.

More material was sent to lime stabilisation for treatment this year than in the previous year.

Negligibly more sewage sludge was produced this year.

Table 4R Line 26. Total sewage sludge produced from non-appointed liquid waste treatment

This data estimates the total sludge from non-appointed liquid waste treatment. It covers all sewage sludge treatment imported into Yorkshire Water in another means rather than direct by the sewer.

This is a new line that has not been previously reported but is made up of 3 elements:

- Tankered Trade Effluent (General- from Domestic and Trade imports)
- Tankered Trade Effluent (Nufarm)
- Trade via 'Private pipe' Syngenta

Although it's not been directly reported the data for the Nufarm and Syngenta will have been consistent for the last 5 years. However, the volumes for Tankered trade effluent have increased steadily over the last 3 years as Yorkshire Water launched an initiative to grow this area of the business.

As you would expect, increased volumes of imports will have a direct impact on the volumes of sludge produced.

The data is different to the PR19 submission for the following reasons:

- At the time of the PR19 submission the volumes considered were all Tankered effluents. Syngenta sludge was not included as this comes into the works via a private pipe. However, given that sludge is produced, and this effluent is none appointed we believe it should be included.
- The Volumes of imported waste have increased, and this directly relates to increased sludge production.
- For the Tankered Effluent we have used a factor to include secondary sludge which wasn't previously included in the PR19 submission.

Table 4R Line 27. Percentage of sludge produced and treated at a site of STW and STC co-location

We have interpreted the definition for this line to be 'any plant that dewatered sludges whether its treated or not', for example, raw caking is included as well as digestion plant processing.

Using this definition, we have been able to deduce that any sludge produced from sites where this does not happen would be tankered into a Sludge Treatment Centre (STC). The percentage of collocation was within 1% of last year's figures.

Table 4R Line 28. Total sewage sludge disposed by incumbents

More sludge was disposed due to reducing our stocks of both raw cake (held onsite due to outlet availability, so we were carrying high stocks at start of reporting year); and green Treated Conditioned Sewage Sludge (TCSS) (due to temporary prohibition from EA being lifted and allowing recycling under a Local Enforcement Position).

Table 4R Line 29. Total sewage sludge disposed by 3rd party sludge service provider

The reported increase is due to more material being sent for lime stabilisation.

Table 4R Line 30. Total sewage sludge disposed

More sludge was disposed due to reducing the stocks of both raw cake and green TCSS.

Table 4R Lines 31-35. Total measure of intersiting "work" done by various methods

This year a new selection criterion was applied to exclude sludge transported from the business to land reclamation as this intersiting is picked up in Table 4R.38 to prevent duplication. As a result, there is a significant reduction in intersiting by truck and in totality.

There has been a marginal increase of work done by tankers (ttds*km/year) due to tankers travelling further in order to reach digester sites rather than travel to closer dewatering sites and subsequently taken out of the business.

Work done by tankers (by volume) also shows an increase compared to the previous year, this is due in part to the extra distance travelled as described above and is compounded by a drop in average sludge % DS moved.

Table 4R Line 36. Total measure of 'work' done in sludge disposal operations by pipeline

We continue to report zero for this line.

Table 4R Line 37. Total measure of work done in sludge disposal operations by tanker

This year reports a slightly higher quantity of 6 ttds*km/year compared to 4 ttds*km/year in the previous year as more liquid sludge was recycled to turf growers.

Table 4R Line 38-39. Total measure of 'work' done in sludge disposal operations

There has been a reduction in the number reporting compared to the previous year. This is due to closer sludge disposal outlets being used, meaning that less distance is travelled.

Table 4R Line 40. Total measure of 'work' done by tanker in sludge disposal operations (by volume transported)

A higher number was achieved as more liquid sludge recycled to turf growers.

Table 4R Line 41. Chemical P sludge as % of sludge produced at STWs

The figure for chemical sludge as a percentage of total sludge produced has increased in comparison to previous values, due to a change in the definition to align with PR19 reporting.

Table 4S: Non-financial data – sewage treatment – wholesale wastewater

For the 12 months ended 31 March 2019

Line description	Unit	DPs	Treatment categories				Treatment categories				Total
			Primary	Secondary		Tertiary					
				Activated Sludge	Biological	A1	A2	B1	B2		

A - Load received at sewage treatment works in 2018-19

4S.1	Load received by STWs in size band 1	kg BOD ₅ /day	0	66	363	1154	48	0	64	0	1695
4S.2	Load received by STWs in size band 2	kg BOD ₅ /day	0	19	275	900	22	25	174	65	1480
4S.3	Load received by STWs in size band 3	kg BOD ₅ /day	0	151	921	2894	298	135	704	600	5703
4S.4	Load received by STWs in size band 4	kg BOD ₅ /day	0	0	4246	9904	878	2758	2070	2811	22667
4S.5	Load received by STWs in size band 5	kg BOD ₅ /day	0	0	9928	16965	5641	2991	4261	2546	42332
4S.6	Load received by STWs above size band 5	kg BOD ₅ /day	0	0	188115	19148	6037	53475	2271	6944	275990
4S.7	Total load received	kg BOD ₅ /day	0	236	203848	50965	12924	59384	9544	12966	349867
4S.8	Load received from trade effluent customers at treatment works	kg BOD ₅ /day	0								38946

B - Number of sewage treatment works at 31 March 2019

4S.9	STWs in size band 1	nr	0	32	68	201	3	0	7	0	311
4S.10	STWs in size band 2	nr	0	1	12	40	1	1	7	3	65
4S.11	STWs in size band 3	nr	0	3	12	45	3	2	12	6	83
4S.12	STWs in size band 4	nr	0	0	13	34	2	8	8	10	75
4S.13	STWs in size band 5	nr	0	0	9	18	5	3	4	2	41
4S.14	STWs above size band 5	nr	0	0	18	6	3	5	1	2	35
4S.15	Total number of works	nr	0	36	132	344	17	19	39	23	610

Line description	Unit	DPs	Current Year
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C - Population equivalent

4S.16	Current population equivalent served by STWs	000	3	5814.504
4S.17	Current population equivalent served by discharge relocation schemes	000s	3	0.000
4S.18	Current population equivalent served by filter bed STWs with tightened/new P consents	000s	3	0.000
4S.19	Current population equivalent served by activated sludge STWs with tightened/new P consents	000s	3	0.000
4S.20	Current population equivalent served by groundwater protection schemes	000s	3	0.000
4S.21	Current population equivalent served by STWs with a Flow1 driver scheme	000s	3	0.000
4S.22	Current population equivalent served by STWs with tightened/new N consents	000s	3	0.000
4S.23	Current population equivalent served by STWs with tightened/new sanitary parameter consents	000s	3	50.201
4S.24	Current population equivalent served by STWs with tightened/new UV consents	000s	3	0.000
4S.25	Population equivalent treatment capacity enhancement	000s	3	0.000

Key

Input cell Calculation cell

Please refer to RAG 4.08 - Guideline for the table definitions in the annual performance report for the reporting year 2018-2019

Treatment works consents																
Phosphorus					BOD ₅						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
0	0	0	1695	1695	0	0	25	123	1547	1695	0	0	11	210	1474	1695
0	0	0	1479	1479	0	0	207	733	540	1480	0	0	281	722	476	1479
0	0	365	5338	5703	0	158	1724	3507	313	5702	0	104	2198	2794	607	5703
0	941	189	21538	22668	0	1457	5151	11888	4172	22668	0	2522	6343	7825	5977	22667
0	2057	4655	35620	42332	0	4548	14168	20841	2775	42332	0	3132	22581	6084	10534	42331
0	1684	0	274304	275988	0	24233	129523	83380	38852	275988	0	134582	88816	13739	38852	275989
0	4682	5209	339974	349865	0	30396	150798	120472	48199	349865	0	140340	120230	31374	57920	349864

0	0	0	311	311	0	0	2	9	300	311	0	0	1	15	295	311
0	0	0	65	65	0	0	9	30	26	65	0	0	12	30	23	65
0	0	4	79	83	0	2	22	52	7	83	0	1	27	44	11	83
0	3	1	71	75	0	5	18	41	11	75	0	6	23	27	19	75
0	2	5	34	41	0	4	15	19	3	41	0	3	23	6	9	41
0	1	0	34	35	0	1	13	17	4	35	0	10	16	5	4	35
0	6	10	594	610	0	12	79	168	351	610	0	20	102	127	361	610

Table 4S Lines 1-16. Load received at sewage treatment works and number of sewage treatment works

These lines summarise the number of WWTWs across a number of size bands, together with the total loads received by the sites in these bands. The overall number of STWs being reported in APR19 is 610 which is one less than in the previous year. The site that has dropped off this reporting is Underbank STW, which is a private septic tank and therefore not reportable

Knostrop STW which has changed from TA1 to SAS following a review of the first draft figures; as this represents the majority of the treatment process on the site.

There was only one change in the consent limit bands between APR18 and APR19 which was Tankersley STW ammonia consent. Last year the ammonia consent was 26mg/l and this year it is 1.3mg/l and therefore moves in the table from >10mg/l column to 1-3mg/l column

The total population equivalent served (4S.16) has increased slightly by 0.15%. This change was evenly distributed between the increase in trade load and an increase in domestic load.

Table 4S Lines 17-25. Populations served at sewage treatment works in 2018/2019

These lines record the population equivalent associated with a number of completed WWTW investment schemes including relocations, quality drivers for Phosphorus, Flow, Nitrogen, Groundwater, Sanitary Determinands, UV and growth.

4S.17 is reported as zero in APR19 as there have been no discharge relocation schemes in this financial year. APR18 also reported zero.

4S.18 reported as zero in APR19 as there have been no beneficial completion sign off for P schemes this financial year. There are a number of schemes ongoing which are expected to complete and be reported within APR20. In APR18 160.893 was reported across 22 sites, however only 5 of these sites actually delivered in APR18 and the reporting figure should have been 56.136 due to a reporting error that indicated all sites had delivered in APR 18 as opposed to a phased delivery across the AMP.

4S.19 reported as zero in APR19 as there have been no tightened/new P consents in this financial year. APR18 also reported zero.

4S.20 reported as zero in APR19 as there have been no groundwater protection schemes in this financial year. APR18 also reported zero.

4S.21 reported as zero in APR19 as there have been no Flow1 driver schemes in this financial year. APR18 also reported zero.

4S.22 reported as zero in APR19 as there have been no tightened/new N consents in this financial year. APR18 also reported zero.

4S.23 reported as 50.201 in APR19. There is one site being reported which is Wombwell STW. This scheme delivered in APR18 reporting period but was not reported in APR18 table. APR18 had a reporting value of 16.049 which derived from Tankersley & Grimethorpe STW but failed to include Wombwell. There have been no further completions since Wombwell STW.

4S.24 reported as zero in APR19 as there have been no tightened/new UV consents in this financial year. APR18 also reported zero.

4S.25 reported as zero in APR19 as there have been no Population equivalent treatment capacity enhancement in this financial year. APR18 also reported zero.

Table 4T – Non-financial data - sludge treatment - wholesale wastewater

For the 12 months ended 31 March 2019

Line description		Unit	DPs	by Incumbent	by 3rd party sludge service providers
A - Sludge treatment process					
4T.1	% Sludge - untreated	%	1	9.4%	0.0%
4T.2	% Sludge treatment process - raw sludge liming	%	1	0.3%	9.3%
4T.3	% Sludge treatment process - conventional AD	%	1	58.7%	1.1%
4T.4	% Sludge treatment process - advanced AD	%	1	17.5%	0.2%
4T.5	% Sludge treatment process - incineration of raw sludge	%	1	2.7%	0.0%
4T.6	% Sludge treatment process - incineration of digested sludge	%	1	0.0%	0.0%
4T.7	% Sludge treatment process - phyto-conditioning/composting	%	1	0.0%	0.0%
4T.8	% Sludge treatment process - other (specify)	%	1	0.0%	0.8%
4T.9	% Sludge treatment process - Total	%	1	88.6%	11.4%

Line description		Unit	DPs	by Incumbent	by 3rd party sludge service providers
B - (Un-incinerated) sludge disposal route					
4T.10	% Sludge disposal route - landfill, raw	%	1	0.0%	0.0%
4T.11	% Sludge disposal route - landfill, partly treated	%	1	0.0%	0.0%
4T.12	% Sludge disposal route - land restoration / reclamation	%	1	19.0%	0.0%
4T.13	% Sludge disposal route - sludge recycled to farmland	%	1	65.0%	13.1%
4T.14	% Sludge disposal route - other (specify)	%	1	0.0%	2.9%
4T.15	% Sludge disposal route - Total	%	1	84.0%	16.0%

Key

 Input cell  Calculation cell

Please refer to RAG 4.08 - Guideline for the table definitions in the annual performance report for the reporting year 2018-2019

This table provides information on the sewage treatment of wholesale water, the loads received by sewage treatment works of various sizes and the population number served by those sites.

We have sent less material to land reclamation than in the previous year and more to liming by third parties. We have done less liming ourselves and we have put more sludges through our own digesters. We have also sent more out through third party digestion. These changes in treatment routes have been due to increased Yorkshire Water asset availability, improved use of the markets and work to identify the most cost-effective third-party treatment routes.

Last year we incinerated slightly more material as the asset ran reliably between July and October 2018. Going forward Yorkshire Water will not incinerate any more sludges as all of our incinerator assets have been decommissioned.

We disposed of less material direct to land restoration and more to agriculture both by ourselves and third parties. We also made operational decisions to divert from land restoration to liming and agriculture because of more internal and external digestion. We have worked hard to identify other treatment and disposal routes which are better for Yorkshire Water and its customers and we have exploited these.

Table 4T Lines 1-9 sludge treatment process

The largest treatment route is conventional digestion followed by land reclamation which is in line with the previous year.

4T.1 is reporting a decrease from previous years as Knostrop AD was commissioned, therefore less material has been sent externally to land restoration and where possible it was diverted to 3rd party lime stabilisation.

4T.2 shows that less material was managed internally through liming due to asset availability whereas more went to 3rd parties diverted from land restoration.

4T.3 shows that more material was processed by incumbents due to asset availability.

4T.4 shows that there was an increase by incumbents due to the availability of the Esholt THP plant.

4T.5 shows that there was a slight increase in the use of incumbents due to our asset availability.

4T.6 is reporting zero, in line with previous years, as we do not incinerate any digested sludge.

4T.7 is reporting zero this year due to the cessation of our conditioning process.

4T.8 shows a slight increase in the process by 3rd parties due to the trial of a new route.

4T.9 shows that there has been a decrease in the total number of 'treatment' by incumbents as more material was sent to 3rd party lime treatment than was sent to land restoration.

Table 4T Lines 10-15 sludge disposal route

These lines provide data on the recycling/disposal route, further separated by who carried out the recycling/disposal.

4T.10 There has been no change to this reported number to last year and remains a zero.

4T.11 There has been no change to this reported number to last year and remains a zero.

4T.12 There has been a decrease in the amount sent to land restoration with more diverted to third party lime stabilisation.

4T.13 The use of incumbents is due to asset availability (the commissioning of Knostrop AD plant). We increased the use of 3rd party and diverted raw material from land restoration to lime stabilisation.

4T.14 The increase in the reported number is because due to the trial of a new route.

4T.15 In total there we have seen a decrease in "disposal" by incumbent as more material was sent to 3rd party lime treatment than was sent to land restoration.

Table 4U – Non-financial data - properties, population and other - wholesale wastewater

For the 12 months ended 31 March 2019

Line description		Bon code	Unit	DPs	Current year
A - Properties and population					
4U.1	Residential properties connected during the year	BP3410	000	3	13.944
4U.2	Business properties connected during the year	BP3415	000	3	0.816
4U.3	Residential properties billed unmeasured sewage	BN2130	000	3	942.759
4U.4	Residential properties billed measured sewage	BN2140	000	3	1125.442
4U.5	Residential properties billed for sewage	BN2150	000	3	2068.201
4U.6	Business properties billed unmeasured sewage	BN2250	000	3	14.971
4U.7	Business properties billed measured sewage	BN2260	000	3	89.470
4U.8	Business properties billed for sewage	BN2270	000	3	104.441
4U.9	Void properties	BN2285	000	3	126.520
4U.10	Total number of properties	BN1178	000s	3	2299.162
4U.11	Resident population	BN2630	000	3	5135.235
4U.12	Non-resident population	BN2620	000	3	46.724
B - Other					
4U.13	Energy consumption - network plus	BM902ECNPS	MWh	3	326525.536
4U.14	Energy consumption - sludge	BM602EC	MWh	3	77368.724
4U.15	Energy consumption - wholesale	BM902ECWS	MWh	3	403894.260
4U.16	Population resident in National Parks, SSSIs and Areas of Outstanding Natural Beauty (AONBs)	BN1609	000s	3	70.036
4U.17	Total sewerage catchment area	BN1176CA	km2	0	1693
4U.18	Designated bathing waters	BN1615	nr	0	19
4U.19	Number of intermittent discharge sites with event duration monitoring	S4016	nr	0	169
4U.20	Number of monitors for flow monitoring at STWs	STWM001	nr	0	10
4U.21	Number of odour related complaints	S4017	nr	0	2849
4U.22	Volume of storage provided at CSOs, storm tanks, etc to meet spill frequency objectives	S4026	m3	0	0
4U.23	Total volume of network storage	CPMS2016	m3	0	4475925

Key

 Input cell  Calculation cell

Please refer to RAG 4.08 - Guideline for the table definitions in the annual performance report for the reporting year 2018-2019

Table 4U provides non-financial data in relation to numbers of properties connected and billed to the Yorkshire Water Wholesale network for Sewerage services.

Table 4U Line 1. Household properties connected during the year

The number of new household properties added for each period within the company's sewerage area during the report year. This is in line with prior year new connections.

Table 4U Line 2. Number of Non-household properties connected during the year

This is a total number of new connections made to the Sewerage network across the period of 01/04/2018 to 31/03/2019 inclusive. The overall number of new Sewerage Connections has increased to 816 in comparison to the 725 recorded in APR18.

Table 4U Line 3. Household properties billed unmeasured sewage

Unmeasured customers are down 30,000 properties (3%) compared to the previous year. This is in line with the past 5 years where the average reduction is 293,000 properties.

Table 4U Line 4. Household properties billed measured sewage

Measured customers are up 4% (40,000 customers). This is in line with the trend seen over the last 5 years.

Table 4U Line 5. Household properties billed for sewage

This is the sum of lines 3 and 4.

Table 4U Line 6. Non-household properties billed unmeasured sewage

This excludes any premises which are vacant. This is an average number of Non-household premises billed for unmeasured sewerage across the of 01/04/2018 to 31/03/2019 inclusive. The total number of billed properties has decreased by 817 which, just as with line 4Q.5, is driven by two causal factors. Firstly, there is an ongoing series of works by Yorkshire Water to replace unmeasured connections with metered connections which has led to an overall reduction in the number of unmeasured supplies within the supply area. Secondly, there has been an increase in the number of vacant premises. Year on year, vacant Unmeasured properties have increased by 240 compared to the APR18 submission.

Table 4U Line 7. Non-household properties billed measured sewage

The figure excludes any premises which are vacant. This is an average number of non-household premises billed for measured sewerage across the period of 01/04/2018 to 31/03/2019 inclusive. The total number of billed properties has increased by 211 since APR18. This is primarily driven by a greater number of properties being connected for

measured sewerage within the NHH market versus which is offset by the net number of newly vacated premises.

Table 4U Line 8. Non-household properties billed for sewage

This is a sum of lines 4U.6 and 4U.7.

Table 4U Line 9. Void properties

Void properties have increased by about 5,000 properties on the prior year.

Table 4U Line 10. Total Number of properties.

This is a calculated cell.

Table 4U Lines 11-12. Resident and non-resident population

These lines refer to the connected population within Yorkshire Water's waste water operational area (note: 4U.12 refers only to holiday population whilst 4U.16 is specific to national parks, Areas of Outstanding Natural Beauty (AONB) and SSSIs).

There are no adverse or improved trends compared to APR18; all the lines are variations simply stating the number of properties connected to the Yorkshire Water sewer network.

In order to provide a level of consistency across clean and waste water population tables, an updated average occupancy rate of 2.40 was used to calculate the population arising from the newly connected properties for the year 2018/2019 and used for clean water tables.

The number of new (2018/2019) household properties in the Yorkshire Water waste water area is 13,994 which when multiplied by the 2.40 occupancy rate gives a population increase of 33,465. This represents an increase of 0.65% which is very similar to that of previous years (0.63% in 2018 and 0.6% in 2017).

Table 4U Line 13-15. Energy Consumption

Due to the nature of water treatment the overall final number is very heavily influenced by the weather. If the winter is colder than average more gas will be required to heat the digesters. Likewise, if there is a particularly wet/dry year this will be reflected in the consumption of electricity.

Electricity – The overall consumption of electricity for both network+ and sludge has decreased this year. The reason for this is a continued focus on energy reduction throughout the business, this is driven through the continual monitoring of multiple key parameters, as well as the implementation of energy efficiency schemes. Some of which are a result of the energy saving opportunity scheme (ESOS) work that is carried out in house. 2018/2019 also experienced a prolonged dry summer resulting in the need for less pumping.

As part of the internal SAP upgrade and change in Bioresources (sludge) the percentage splits between the two boundaries have been improved in 2018/2019 resulting in increased accuracy of our data reporting. This has resulted in a shift in electricity from Sludge to Network+. The new percentage splits have taken a more granular approach down to an individual asset level.

Gas Oil has seen a reduction; Esholt Hall was closed down in 2017/2018 resulting in a reduction in heating requirement in 2018/2019; also, operational improvements and reliability of the Thermal Hydrolysis plant have resulted in less heating being required.

The reduction at Knostrop is due to increased asset availability in relation to the incineration plant. A large portion of the usage at Knostrop is consumed during the warming up of the incinerator, if this is kept to a minimum less gas oil is required. The incinerator has now been replaced with a £72M digestion facility.

Transportation for waste network + has increased slightly, the increase is due to business need. This will vary annually based upon staff levels and operational issues such as sludge stock levels.

Natural Gas- Is used in boilers to provide heating to buildings, as well as heat for the digestion process ensuring the digesters are kept to approximately 36OC. The amount of gas required annually will vary due to ambient temperatures. Despite a relatively mild winter and warm summer, there has been a need for additional heating to maintain temperatures when combined heat and power engines have been undergoing servicing.

Table 4U Line 16. Population resident within National Parks, SSSIs and Areas of Outstanding Natural Beauty

This data is generated using a mixture of Yorkshire Water's GIS system and billing records but additionally using local authority annual reports and input from AONB officers.

The national park boundaries within Yorkshire Water's operational area are complex as Yorkshire Water 'shares' all three with other water and sewage companies. The populations were extrapolated from the data collected for individual WwTWs together with information published by the individual national park/AONB authorities.

The national parks partially within Yorkshire Water's waste water operational area are:

- North York Moors
- Peak District
- Yorkshire Dales

The two AONB areas within our operational area are:

- Hambleton Hills AONB
- Nidderdale AONB

To identify the population in Sites of Special Scientific Interest (SSSI) we used our company GIS system, Odyssey. 487 SSSI's are recorded as being within our Waste Water Operational Area within which 65 domestic properties were identified and cross checked against Yorkshire Water's billing system (Yorbill).

A number of assumptions and uncertainties are inherent in the data:

- all domestic properties are continuously occupied;
- some properties located within a SSSI are also likely to be within a National Park/AONB. Given the small numbers involved it is not considered significant; and
- the differing boundaries (clean/waste/Yorkshire Water other water & sewerage companies within Yorkshire Water's operational area make it difficult to separate the data.

Table 4U Line 17. Total sewage catchment area

This measure has remained unchanged at 1,693 from figure reported in 2017/2018 and previous years.

Table 4U Line 18. Designated Bathing Waters

The number of designated coastal bathing waters is 19. This remains the same compared to the previous year as no coastal bathing waters have been designated or de-designated during the period.

Table 4U Line 19. Number of intermittent discharge sites with event duration monitoring

This line records the number of intermittent discharges from the sewer network that have had event duration monitoring installed between 1/4/2018 and 31/3/2018, and had their environmental permit amended to include that installation. Event duration monitoring shows when and for how long any discharge is occurring from sewer to the environment.

Event duration monitoring measures the height of sewage in the sewer, relative to an overflow weir, every 15 minutes. When the height of sewage equals 100% of the overflow weir height a discharge is recorded until that height drops back below 100%. With this information Yorkshire Water can effectively direct resources to those intermittent discharges that overflow to the environment most often.

Table 4U Line 20. Number of monitors for flow monitoring at STWs

Prior to the start of AMP6 regulatory outputs are agreed between the Environment Agency and Yorkshire Water. Dates for the outputs are agreed, with a maximum delivery date as the end of AMP6 (31st March 2020).

There were 34 sites in the final NEP for AMP6, and this line is to give a breakdown of the number completed within the reporting year. In APR19 there was one site completed within the reporting period, which was Atwick STW.

A look back over the data for APR18 showed that we reported zero completions; however, it is now understood that the APR18 number should have been reported as 9. The reason for those 9 sites not being reported in APR18 was due to completion certificates having not yet received by the reporting date. But the beneficial completion did occur in APR18 reporting period. To consolidate this APR19 will report 10 STWs as completed (9 in APR18 and 1 in APR19).

Table 4U Line 21. Non-financial data – Properties, population and other – Wholesale wastewater

The data tells us how many telephone or written complaints we have received in relation to odours coming from either our treatment works or our assets. There has again been a reduction in the number of complaints, continuing the previous year's trends.

Network odour issues – From gaining knowledge about the cause of odour complaints, a refreshed focus into the effective management of the network has been applied. In most instances a build-up of materials, some of which are Fats, Oils and Greases/unsuitable items, have been the cause which has been remedied with a robust cyclical flushing programme. In addition to this, a greater focus on customer education for the correct disposal of fats, oils and greases has achieved a positive impact. The cyclical management of issues has enabled us to reinvest the time saved from repeat investigations to focus on those issues which are more challenging, due to their complexity or required technical solution. Finally, where issues are found to be private in nature, we support the customer with advice on possible solutions and also proactively handover our investigation outcomes to the local environmental health team to support any further investigations that are required.

Treatment odours – There was a site-specific issue which increased the volume of complaints in the previous year. A site-specific improvement plan was established in conjunction with the local City Council Environmental Health team to satisfy their needs. This has been managed throughout the last 12 months and work has progressed steadily which has seen the volume of complaints reduce due to reduced odour problems and gaining confidence in our active management of the issue.

We predict a continued reduction of complaints across both network and treatment odour complaints.

As part of the Upper Quartile plans, an increased workforce and insourcing of network technicians will provide benefit to the quality and consistency of investigations and approaches to manage and mitigate odour issues stemming from the sewer network. Our customer campaign for correct disposal of unsuitable items and fats, oils and greases continues, which will stem some of the issues at source.

With regards to treatment complaints and management of the sites, we will continue to use the insight gained from cluster complaints alongside a wholesale organisational change within the process and pumping departments to reduce the span of control and increase focus.

We're also reviewing our processes and resourcing of our Network Protection Officers to continue to drive down the impacts caused by unsuitable items and fats, oils and greases impact.

Table 4U Line 22. Volume of storage provided at CSOs, storm tanks etc, to reduce spill frequency

This records the volume of storage that has been provided in each year. Additional storage is a requirement within the WINEP obligations. Yorkshire Water only two obligations in this AMP. They have not yet completed and therefore we are currently reporting zero.

Table 4U Line 23. Total volume of network storage

This measure has increased in 2018/2019 to 4,475,925 m³ from 4,081,786 m³ in 2017/2018. This is in line with historic performance for this measure.

Table 4V- Operating cost analysis - water resources

For the 12 months ended 31 March 2019

Line description	Bon Code	Unit	DPs	Impounding reservoir	Pumped storage	River abstractions	
Water resources							
A - Opex analysis							
4V.1	Power	BM102	£m	3	0.172	0.000	0.640
4V.2	Income Treated as negative expenditure	BM836	£m	3	0.000	0.000	0.000
4V.3	Abstraction charges/discharge consents	WS1003	£m	3	1.981	0.000	2.282
4V.4	Bulk supply	BM240	£m	3	3.190	0.012	0.058
Other operating expenditure							
4V.5	- Renewals expensed in year (Infrastructure)	WS1005	£m	3	0.000	0.000	0.000
4V.6	- Renewals expensed in year (Non-Infrastructure)	WS1006	£m	3	0.000	0.000	0.000
4V.7	- Other operating expenditure excluding renewals - direct	BM108	£m	3	3.841	0.014	0.070
4V.8	- Other operating expenditure excluding renewals - indirect	BM110	£m	3	4.987	0.019	0.090
4V.9	Total functional expenditure	BM816	£m	3	14.172	0.045	3.141
4V.10	Local authority and Cumulo rates	BM817	£m	3	6.106	0.023	0.111
4V.11	Total operating expenditure (excluding 3rd party)	BM316	£m	3	20.278	0.068	3.251
4V.12	Depreciation	FT00865	£m	3	4.618	0.009	0.424
4V.13	Total operating costs (excluding 3rd party)	BM319	£m	3	24.896	0.077	3.675

Line description	Bon Code	Unit	DPs	Water resources	Raw water distribution	Water treatment	
B - Other expenditure - wholesale water							
4V.14	Employment costs - directly allocated	BM3010	£m	3	2.436	1.592	13.224
4V.15	Employment costs - indirectly allocated	BM3011	£m	3	1.300	0.528	3.800
4V.16	Number FTEs consistent - directly allocated	W3030	Nr	0	54	33	292
4V.17	Number FTEs consistent - indirectly allocated	W3031	Nr	0	30	12	87
4V.18	Costs associated with Traffic Management Act	W3032	£m	3	0.000	0.000	0.000

Groundwater, excluding MAR water supply schemes	Artificial recharge (AR) water supply schemes	Aquifer storage and recovery (ASR) water supply schemes	Other	Total
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1.201	0.000	0.000	0.000	2.014
0.000	0.000	0.000	0.000	0.000
0.897	0.000	0.000	0.000	5.161
0.607	0.000	0.000	0.000	3.867

0.000	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000
0.730	0.000	0.000	0.000	4.655
0.946	0.000	0.000	0.000	6.042
4.382	0.000	0.000	0.000	21.739
1.161	0.000	0.000	0.000	7.401
5.543	0.000	0.000	0.000	29.140
1.415	0.000	0.000	0.772	7.238
6.958	0.000	0.000	0.772	36.378

Treated water distribution	Total
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28.598	45.850
12.820	18.448
815	1194.160
293	421.710
4.438	4.438

Table 4V– Operating cost analysis - water resources (continued)

For the 12 months ended 31 March 2019

Line description	Bon Code	Unit	DPs	Water resources	Raw water distribution	Water treatment	
C - Service charges							
4V.19	Canal & River Trust service charges and discharge consents	W3033	£m	3	0.605	0.000	0.000
4V.20	Environment Agency service charges/ discharge consents	W3034	£m	3	4.972	0.000	0.073
4V.21	Other abstraction charges/ discharge consents	W3035	£m	3	0.000	0.000	0.000
4V.22	Statutory water softening	W3036	£m	3	0.000	0.000	0.000

Key

 Input cell  Calculation cell

Please refer to RAG 4.08 - Guideline for the table definitions in the annual performance report for the reporting year 2018-2019

Treated water distribution	Total
0.000	0.605
0.004	5.049
0.000	0.000
0.000	0.000

This was a new table for 2017/2018 and has been further updated for 2018/2019. It is a further disaggregation of water resources data contained within 4D and reconciles to line 9 however, it does not reconcile with table 4J (as table 4J excludes exceptional costs). To allocate these costs, all relevant assets were classified according to the tables in line with RAG 4.08.

There has been an increase in directly allocated FTE's and employment costs within water networks plus as a result of the escalation to meet the leakage targets and deal with the severe weather experienced during 2018/2019. These updated employment costs and full-time equivalents (FTE's) have been used to apportion costs into the wholesale water upstream services and we have used consistent manpower allocations (detailed by each FTE) which has provided the basis for lines 9 -11.

There has been a significant cost increase from traffic management and from permits this year, as more local authorities introducing charging schedules in accordance with the Traffic Management Act. There has been a

significant number of mains bursts and network activity following the severe winter and summer weather (and greater leakage efforts) which necessitated a greater level of digs on the highways and therefore traffic management activity. The ratio of permits to notices has increased to 31:69. Whilst the ratio of permits is forecast to increase, the level of activity is forecast to reduce in future years to normal levels of activity.

Total direct and indirect employment costs within water networks plus have increased year-on-year by 36%, but with a significantly increased proportion of directly attributed employment costs due to a target to reduce leakage and insource (previously external) leakage detection engineers, as well as recruiting through external channels. The employment costs have also increased due to the need for additional resources to meet stretching leakage targets from 2020.

Table 4W– Operating cost analysis - sludge treatment, treatment and disposal

For the 12 months ended 31 March 2019

		Unit	DPs	Pipeline	Tanker	Truck
A - Sludge transport method						
4W.1	Power	£m	3	0.000	0.003	0.000
4W.2	Income Treated as negative expenditure	£m	3	0.000	0.000	0.000
4W.3	Discharge consents	£m	3	0.000	0.000	0.000
4W.4	Bulk supply	£m	3	0.000	0.000	0.000
Other operating expenditure						
4W.5	- Renewals expensed in year (Infrastructure)	£m	3	0.000	0.000	0.000
4W.6	- Renewals expensed in year (Non-Infrastructure)	£m	3	0.000	0.000	0.000
4W.7	- Other operating expenditure excluding renewals - direct	£m	3	0.000	2.044	0.000
4W.8	- Other operating expenditure excluding renewals - indirect	£m	3	0.000	4.713	0.000
4W.9	Total functional expenditure	£m	3	0.000	6.760	0.000
4W.10	Local authority and Cumulo rates	£m	3	0.000	0.015	0.000
4W.11	Total operating expenditure (excluding 3rd party)	£m	3	0.000	6.775	0.000
4W.12	Depreciation	£m	3	0.000	0.390	0.000
4W.13	Total operating costs (excluding 3rd party)	£m	3	0.000	7.165	0.000

Line description	Unit	DPs	Untreated sludge	Raw sludge liming	Conventional AD
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B - Sludge treatment type						
4W.14	Power	£m	3	0.000	1.301	-1.846
4W.15	Income treated as negative expenditure	£m	3	0.000	0.000	-1.140
4W.16	Discharge consents	£m	3	0.000	0.000	0.000
4W.17	Bulk supply	£m	3	0.000	0.000	0.000
Other operating expenditure						
4W.18	- Renewals expensed in year (Infrastructure)	£m	3	0.000	0.000	0.000
4W.19	- Renewals expensed in year (Non-Infrastructure)	£m	3	0.000	0.000	0.000
4W.20	Other direct operating expenditure (New code? Check def'n)	£m	3	0.000	2.755	5.652
4W.21	Other indirect operating expenditure (new code? Check def'n)	£m	3	0.000	2.532	5.102
4W.22	Total functional expenditure	£m	3	0.000	6.588	7.768
4W.23	Local authority and Cumulo rates	£m	3	0.000	0.144	0.956
4W.24	Total operating expenditure (excluding 3rd party)	£m	3	0.000	6.732	8.724
4W.25	Depreciation	£m	3	4.198	0.000	7.568
4W.26	Total operating costs (excluding 3rd party)	£m	3	4.198	6.732	16.292

Total

0.003
0.000
0.000
0.000

0.000
0.000
2.044
4.713
6.760
0.015
6.775
0.390
7.165

Advanced AD	Incineration of raw sludge	Incineration of digested Sludge	Photo-conditioning/ composting	Other	Total
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-1.189	0.000	0.000	0.000	0.000	-1.734
-0.593	0.000	0.000	0.000	0.000	-1.733
0.000	0.000	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000	0.000

0.000	0.000	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000	0.000
1.771	0.000	0.000	0.000	0.000	10.178
1.552	0.000	0.000	0.000	0.000	9.186
1.541	0.000	0.000	0.000	0.000	15.897
0.213	0.000	0.000	0.000	0.000	1.313
1.754	0.000	0.000	0.000	0.000	17.210
2.927	0.000	0.000	0.000	0.000	14.693
4.681	0.000	0.000	0.000	0.000	31.903

Table 4W- Operating cost analysis - sludge treatment, treatment and disposal (continued)

For the 12 months ended 31 March 2019

Line description		Unit	DPs	Landfill, raw	Landfill, partly treated	Land restoration/reclamation
C - Sludge treatment type						
4W.27	Power	£m	3	0.000	0.000	0.000
4W.28	Income treated as negative expenditure	£m	3	0.000	0.000	0.000
4W.29	Discharge consents	£m	3	0.000	0.000	0.052
4W.30	Bulk supply	£m	3	0.000	0.000	0.000
Other operating expenditure						
4W.31	- Renewals expensed in year (Infrastructure)	£m	3	0.000	0.000	0.000
4W.32	- Renewals expensed in year (Non-Infrastructure)	£m	3	0.000	0.000	0.000
4W.33	Other direct operating expenditure (New code? Check def'n)	£m	3	0.000	0.000	3.096
4W.34	Other indirect operating expenditure (new code? Check def'n.)	£m	3	0.000	0.000	0.357
4W.35	Total functional expenditure	£m	3	0.000	0.000	3.505
4W.36	Local authority and Cumulo rates	£m	3	0.000	0.000	0.003
4W.37	Total operating expenditure (excluding 3rd party)	£m	3	0.000	0.000	3.508
4W.38	Depreciation	£m	3	0.000	0.000	0.000
4W.39	Total operating costs (excluding 3rd party)	£m	3	0.000	0.000	3.508

Other expenditure - Wholesale wastewater

Line description		Unit	DPs	Network plus sewage collection	Network plus sewage treatment	Sludge
D - Opex analysis						
4W.40	Employment costs - directly allocated	£m	3	14.139	22.100	10.123
4W.41	Employment costs - indirectly allocated	£m	3	5.229	5.079	2.538
4W.42	Number FTEs - directly allocated	Nr	0	409	546	235
4W.43	Number FTEs - indirectly allocated	Nr	0	120	117	58
4W.44	Costs associated with Traffic Management Act	£m	3	0.510	0.000	0.000
4W.45	Costs associated with Industrial Emissions Directive	£m	3	0.000	0.000	0.000

E - Service charges						
4W.46	Canal & River Trust service charges and discharge consents	£m	3	0.269	0.000	0.000
4W.47	Environment Agency service charges / discharge consents	£m	3	2.208	4.255	0.180
4W.48	Other service charges / permits	£m	3	0.000	0.000	0.000

Sludge recycled to farmland	Other	Total
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0.000	0.000	0.000
0.000	0.000	0.000
0.120	0.009	0.181
0.000	0.000	0.000

0.000	0.000	0.000
0.000	0.000	0.000
7.132	0.520	10.748
0.821	0.061	1.239
8.073	0.590	12.168
0.007	0.001	0.011
8.080	0.591	12.179
0.000	0.000	0.000
8.080	0.591	12.179

Total
46.362
12.846
1190
295
0.510
0.000
0.269
6.643
0.000

Key

Input cell Calculation cell

Please refer to RAG 4.08 - Guideline for the table definitions in the annual performance report for the reporting year 2018-2019

This was a new table for 2017/2018 and has seen further alteration for 2018/2019. It is a disaggregation of table 4E of sludge costs into sludge treatment, transport and disposal, and reconciles to table 4E line 9, with further opex and service charge analysis for wholesale waste water in Sections D and E. (Please note that this does not reconcile with table 4K as this table excludes exceptional costs).

Sludge transport analysis is a new segment of this table in 2018/2019. All of our sludge transport costs are carried out using our sludge tanker fleet and as a result these have all been allocated to the tanker column for section A of table 4W.

To allocate the sludge treatment costs, all relevant assets were classified according to the tables in line with RAG 4.08, with sludge treatment costs directly allocated by site where possible into the relevant treatment categories (Untreated Sludge, Conventional & Advanced). Of the total cost 65% have been directly allocated, given that most assets already had dedicated cost centres. The remaining 35% non-site-specific costs were apportioned using the site-specific splits according to the Regulatory Accounting Guidelines and as detailed further in our Accounting Methodology. Sludge Disposal route costs have also been allocated using this method.

To allocate employment costs and full-time equivalents (FTE's) into the wholesale waste water upstream services, we have used consistent manpower allocations (detailed by each FTE) as provided the basis for lines 40-43.

This table refers to the total costs arising from the implementation of Local Authority permitting schemes which are designed to improve the control and management of work across the county's roads.

Previously, Yorkshire Water had to notify the Local Authority of intended work on the highway and the council could provide direction and apply penalties if a company breached the notice, but they had limited control over when work was done.

Under the permit schemes, all scheduled work is granted a permit and the County Councils have a greater ability to ensure that work by different utility providers in the same area does not clash and that where possible jobs avoid peak times of the day and busy times of the year.

There have been several changes in the internal work practices as a result of the introduction of permits:

1. More jobs now have to be done out of hours, completed and the site cleared within one working day and there are also additional requests for work has to be completed 'out of core hours' and on a weekend.
2. Many permit conditions stipulate that the traffic management on site includes "manned" lights.
3. Highway charges have also noticeably increased for road closures, parking bay suspensions etc along with the costs for the Permit Scheme by the Local Authority's.

This has meant that the average job cost of a 'permitted task' is significantly above the cost of the comparable task done under the previous notice scheme.

9. Risk and compliance statement

Risk and Compliance Statement

Purpose and scope of the risk and compliance statement

The uninterrupted supply of sufficient clean, safe drinking water and removal of waste water is an essential service we provide for our customers. To make sure this is achieved in a way that is safe and compliant for all our customers, whilst protecting and enhancing the environment, we need to comply with a range of regulatory and legal obligations. We recognise the importance of openly reporting our level of compliance with these obligations and how this has been achieved in building customer confidence.

This statement sets out how we have complied with all of our relevant statutory obligations and our Instrument of Appointment (licence), regulatory and performance obligations, where Ofwat is our regulator. It allows us to demonstrate our accountability to our customers and demonstrates to Ofwat how we are complying with its obligations.

This statement covers the reporting year 1 April 2018 to 31 March 2019 for all obligations, except for environmental compliance and water quality parameters which covers the calendar year, 1 January 2018 to 31 December 2018.

The statement is in three sections:

- **Section 1:** The Board assurance statement confirms the extent of our compliance with our obligations. It is signed by the Yorkshire Water Services Limited Company Secretary on behalf of the Board.
- **Section 2:** Outlines the processes and assurance we have in place to achieve compliance and meet our obligations.
- **Section 3:** Assurance letter from our independent technical advisor Jacobs.

Section 1

Board Assurance Statement

As the Board of Yorkshire Water Services, we are satisfied that we have sufficient processes, systems of internal control and assurance in place to allow us to confirm that:

- We have a full understanding of all our statutory, regulatory and licence obligations
- Subject to the exceptions noted in Table 1, we are meeting all these obligations
- We have taken appropriate steps to understand and meet the expectations of our customers
- We have designed our services to meet those expectations, including the value of water bills our customers are willing and able to pay
- We have sufficient processes and internal systems of control to fully meet our obligations
- We have appropriate systems and processes in place to allow us to identify, manage and review our risks
- Our risk management process identifies and escalates risk to be managed to the level reported.

We confirm that we achieve Ofwat's ambitions for transparency by:

- Providing information to customers in line with Ofwat's information principles
- Involving customers and their representatives in improving our approach to providing information.

We confirm that we have:

- Provided Ofwat with assurance that we have sufficient financial and management resources to enable us to carry out our regulated activities (licence condition I)
- Considered the financial impact of a range of severe but plausible risk scenarios materialising to enable us to provide reasonable assurance that the Company will be able to continue in operation and meet its liabilities as they fall due over the next 11 years, to 2030, as set out in our long-term viability statement which can be found in Appendix 4 of our Annual Performance Report
- Sufficient rights and assets available to enable a special administrator to run the Company if such an order was to be made (licence condition K3.1)
- Made sure that all trade with associate companies in the year has been at arm's length (licence condition I)
- Maintained the investment grade credit rating Baa2 (licence condition I)
- Explained how we link Directors' pay to standards of performance which can be found in our Annual Report and Financial Statements and Appendix 4 of our Annual Performance Report (section 35A of the Water Industry Act 1991)
- Reported in Table 1 of this Risk and Compliance Statement where we have not achieved the level of performance agreed in our final determination.

The Board confirms that, over the period covered by this statement, it has complied in all material respects with its relevant statutory, licence and regulatory obligations that have not been confirmed by other processes, and that it is taking appropriate steps to manage the risks it faces.

Our independent technical advisor, Jacobs, has reviewed the approach and processes we follow in assessing compliance with our obligations. A copy of their Assurance Statement is provided in section 3 of this Risk and Compliance Statement.

Principles of Corporate Governance

The Board is committed to achieving the highest standards of corporate governance in accordance with the requirements of company law, current best practice, the UK Corporate Governance Code (the Code) and Ofwat's guidance.

The Board is pleased to confirm that by 31 March 2015, it had fully implemented the principles which Ofwat expected companies operating in the water sector in England and Wales to apply, as set out in its document entitled "Board leadership, transparency and governance principles" published in January 2014 "the Ofwat Principles", and we have continued to comply throughout the year ended 31 March 2019. The largest single group of directors on the Board are the independent non-executive directors, led by an independent non-executive Chairman. Since September 2017 we have had investor representatives present on the Board but we have continued to comply with the Ofwat Principles.

The matters reserved to the Board, together with the Terms of Reference of the Board's principal Committees are published on the Company's website: www.yorkshirewater.com/about-us/what-we-do/corporate-governance-and-structure. In accordance with the Ofwat Principles the Board adopted its own "Board Leadership, Transparency and Governance Code" ("the Yorkshire Water Code") in February 2014. This is available on the Company's website www.yorkshirewater.com/sites/default/files/Yorkshire%20Water%20transparency%20code.pdf. The Yorkshire Water Code sets out how the Company has complied with the Ofwat Principles.

The Board also notes the changes to the Ofwat Principles, with effect from 1 April 2019, and the revisions to the UK Corporate Governance Code which also come into effect for Yorkshire Water from the same date. Changes have been implemented to ensure that we comply with these new Principles and Code provisions and we will report on this in our next Annual Performance Report.

Further information on our governance is contained within section 7 of the Annual Performance Report. Additional detail is also provided within the Annual Report and Financial Statements. Both reports can be viewed on our reports webpage: www.yorkshirewater.com/reports.

Exceptions

The following exceptions to achieving our obligations have been shared with Ofwat.

Table 1

Obligation	Yorkshire Water position	Action being taken to improve
<p>Water Industry Act: maintain maps of their sewers. Clause/section 199.</p> <p>Subject to subsections (6) to (8), it shall be the duty of every sewerage undertaker to keep records of the location and other relevant particulars.</p>	<p>The Water Industry Act places an obligation on waste water companies to maintain maps of their sewers.</p> <p>In common with all other waste water companies in England and Wales not all our sewers are mapped.</p>	<p>We continue to improve our maps as we perform work on our waste water networks.</p>
<p>Performance commitments.</p> <p>For 2018/2019 we have met or exceeded 21 of our 26 Performance Commitments.</p>	<p>For 2018/2019 we have not met the target for the following five performance commitments:</p> <ol style="list-style-type: none"> 1. Drinking water quality compliance 2. Drinking water quality contacts 3. Category 1 and 2 pollution incidents 4. Energy generation 5. Quality of customer service (SIM) <p>Drinking water quality compliance</p> <p>In 2018/2019 we managed to achieve an improvement in the overall compliance figure from 99.953% to 99.962%, however we did not achieve our target of 100% compliance.</p> <p>Drinking water quality contacts performance commitment.</p> <p>In 2018/2019 our customers contacted us 7,964 times about the quality of their drinking water. This was a marginal decrease from 8,100 contacts in 2017/2018 however, we did not achieve our target of 6,108 contacts.</p> <p>Category 1 and 2 pollution incidents</p> <p>We are disappointed that we were above target for Category 1 and 2 incidents with 11 performance commitment impacting incidents against a target of no more than 2. However, we achieved our performance commitment for Category 3 pollution incidents (188 versus a target of 211 or fewer).</p>	<p>Detailed action plans to improve our performance are monitored by our Asset Delivery Assurance Groups.</p> <p>You can read more about our performance and any actions we are taking in section 4 of our Annual Performance Report.</p> <p>www.yorkshirewater.com/reports</p>

Exceptions - continued

Obligation	Yorkshire Water position	Action being taken to improve
<p>Performance commitments continued.</p> <p>For 2018/2019 we have met or exceeded 21 of our 26 Performance Commitments.</p>	<p>Energy generation performance commitment.</p> <p>In 2018/2019, we supplied 11.3% of our needs through self-generated energy. However, this falls short in achieving our performance commitment of generating 12% of our energy needs from renewables.</p> <p>Quality of customer service (SIM)</p> <p>Our overall score this year was 84.0, compared to 84.3 points last year which means we have not achieved our performance commitment which is to improve year on year.</p>	
<p>Environment Agency Environmental Performance Assessment.</p>	<p>The Environment Agency annually completes an Environmental Performance Assessment (EPA) of the water companies in England, examining performance on a range of environmental compliance matters such as pollutions incidents and waste water treatment works compliance.</p> <p>Six of our 611 waste water treatment works did not meet their discharge permit conditions in 2018. This was a slight reduction in performance compared to 2017 when we had five failing waste water works. It is our continued aim to achieve high levels of performance and drive towards 100%.</p>	<p>We have continued to deliver our programme of environmental investment and investigation needs to 2020. This programme focuses on the investment required to enhance our waste water treatment capabilities and protect the environment.</p> <p>The programme also includes investigations to understand and inform future investment needs.</p>

In addition to these known exceptions to achieving our obligations, our annual Control and Risk Self-Assessment process, by which all senior leaders across the Company confirm their awareness and compliance with our highest risk obligations, has identified a risk of non-compliance. Our process identified 91% awareness and compliance across all relevant obligations. We have a clear company-wide action plan in place to improve awareness of our processes to ensure compliance with the obligations showing the highest risk of non-compliance: Working Time Regulations and Market Abuse Regulations. We have agreed 193 actions to improve our overall awareness and compliance. Progress in delivering these is monitored by the Yorkshire Water leadership team.

Board Signatures

Signed by the Yorkshire Water Services Limited Company Secretary on behalf of the Board of Directors



Kathy Smith
Company Secretary

This statement was approved at a meeting of the Yorkshire Water board on 9 July 2019 and signed off on its behalf by Kathy Smith, Company Secretary.

Section 2

Assurance to confirm compliance

We have a full understanding of all our obligations

Our activities are governed by a range of legislation as well as the requirements of our licence, regulations set by various stakeholders and the performance commitments we make to our customers. It is important that we understand the detail of all these obligations and respond to any changes. To make sure we achieve this, we employ relevant subject matter experts called Legislation Champions to identify new or amended obligations and to translate the requirements into compliant policies and procedures for colleagues to follow. The subject matter experts include, but are not limited to, Legal Services, the Regulation team, Company Secretariat, Financial Services, Health and Safety, Asset and Process Engineers and Human Resources. If needed, these teams draw on deeper external expertise to ensure that any changes to our obligations are appropriately applied.

We understand the extent to which we meet those obligations

Compliance with the approved policies and procedures to make sure we achieve our obligations is monitored through our three lines of assurance. This assurance is mapped to make sure effective coverage and dynamic escalation of risks and issues. Corrective actions are raised and monitored where weak controls or non-compliance is identified.

To support and test this approach, all senior leaders are required to provide personal assurance over their team's awareness and compliance with relevant obligations by completing an annual Control and Risk Self-Assessment (CRSA). The Legislation Champions set out the obligations each team needs to be aware of and comply with. Where senior leaders identify weaknesses, they are required to detail the actions they are taking to improve awareness and achieve compliance, including a reasonable timescale. The achievement of these actions is monitored by business unit leadership teams, the Risk Committee, the Yorkshire Water Leadership Team and the Board. The results of the CRSA exercise is triangulated with other sources of assurance: independent technical advisors (Jacobs) assess the adequacy of the process and Internal Audit tests individual judgements on the level of compliance to supporting evidence.

The CRSA outturn for 2018/2019 indicates a high level of compliance within Yorkshire Water at 91%. The obligations with the highest levels of compliance and awareness are environment (95%), data and security (93%), human resources (93%), and health and safety (90%). Work to improve company-wide awareness of and compliance with the Working Time Regulations and the Market Abuse Regulations is our key focus during the first six months of 2019/2020, as well as maintaining our momentum on General Data Protection Regulation compliance.

We have taken appropriate steps to understand and meet the expectations of our customers and we have designed our services to meet those expectations, including the value of water bills our customers are willing and able to pay

The 5.4 million people who live in Yorkshire and the millions of people who visit Yorkshire each year, rely on our services for their basic health needs and lifestyles. There are more than 140,000 businesses who use our water to provide goods and services that support the economy, not just in Yorkshire, but the whole of the UK.

Our ongoing customer and stakeholder research programme has informed and developed both our long-term strategy and business plan 2020-2025. Based on feedback from over 34,000 customers and stakeholders, 88% of household and 82% of non-household customers supported our plan. 78% of our customers we surveyed also said the plan was affordable. The Yorkshire Forum for Water Customers also recognised that the programme of activity undertaken for PR19 has been much greater in both scope and scale, than previous price reviews.

"The level of innovation and the extent and reach of the customer research programme is commendable and has meant that Yorkshire Water now has an expanded depth and understanding about its customers to shape its services around their preferences."

Yorkshire Forum for Water Customers, PR19 Assurance Report, September 2018

Our conversations with customers have informed the development of our ambitious 'upper quartile' customer service targets for the business. Throughout the research programme, our customers told us that when compared to the rest of the industry, they wanted to see improvements in three specific areas of service; leakage, pollution and internal sewer flooding. We have therefore set ambitious targets to achieve this expectation which our customers support. We have committed to reducing leakage by 40%, reducing pollution by 40% and reducing internal sewer flooding incidents by 70%.

We also recognise that our customers lifestyles are changing, and therefore the way they expect to contact us is changing with it. They expect to be able to contact us 24 hours a day, seven days a week whether for a service related query or to pay a bill. We have over the last couple of years developed digital channels which allow our customers to contact us 24/7, including live chat, web self-serve and call back options. We are also tailoring our service offering to customers through intelligent personalisation, ensuring the customer receives a level of service which meets their lifestyle needs.

We also have a much better understanding of the role water plays in the lives of our customers, particularly when considering the diverse needs of our customers. We have

appointed a Safeguarding Officer (the first of its kind in the water sector) to make sure that the welfare of our colleagues and customers is protected. We will identify households which could be deemed vulnerable, e.g. households which may require a consistent supply of clean water to care for sick relatives, or a household who may be struggling to pay their bill.

Along with announcing our intention to become 'dementia friendly', we have also launched an ambitious approach to support our most vulnerable customers through the development of both a social tariff and a 'best tariff' initiative. We are currently proactively contacting 50,000 customers who would be financially better off by moving on to a meter.

We continue to strengthen our online community which has over 1,000 customers who regularly comment on and take part in research and discussions on a host of different subjects related to topics like customer service, reporting, our plans or even just the way in which we communicate with them. This engagement, alongside our regular interactions with customers and stakeholders has given us much-improved insights into the diverse and changing needs of our customers and stakeholders.

"It's been an absolute pleasure to be involved in a project that has involved the customer so much and given feedback on all our contributions. How lovely and refreshing. Many organisations could learn from your example."

**Customer (Leeds)
Your Water online community
September 2018**

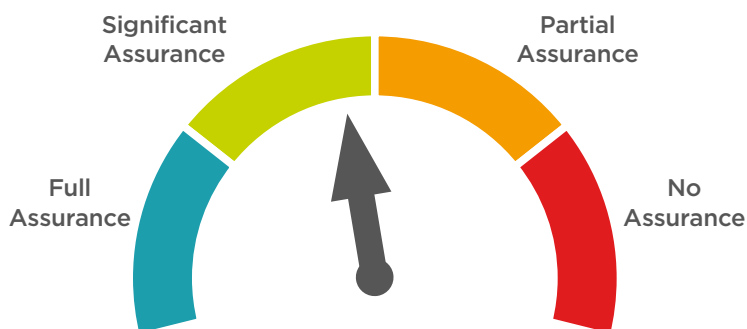
We have also developed our long-term strategy through consultation with our customers and stakeholders. Customer support for our five Big Goals and the approach we are taking is extremely high: Customers (94% support), Water Supply (96% support), Environment (95% support), Transparency (92% support) and Bills (95% support).

Both the long-term strategy and PR19 business plan have been co-created and co-developed with our customers (and stakeholders) and the high level of customer support demonstrates they reflect customers wants and needs in the medium and long-term.

We have sufficient processes and systems of internal control to meet our obligations

The Audit Committee monitors the effectiveness and operation of Yorkshire Water's system of internal control on behalf of the Board. Our controls are designed to achieve compliance with obligations and manage the risk of failing to achieve the business objectives we have agreed with our customers and our regulators. The operational policies and procedures which set out these controls are housed in the Integrated Management System or similar repositories and achieve international quality standards for Environmental Management, Quality Management, Occupational Health and Safety and Asset Management.

Three lines of assurance work together to provide confidence to senior leaders and other stakeholders over the adequacy of the design and operation of the controls. Each year, the Head of Risk and Internal Audit summarises this assurance in a single conclusion on the systems of internal control, risk management and governance. In 2018/2019 the Head of Risk and Internal Audit provided 'Significant Assurance' that there is generally an effective system of internal control which is designed to meet the Company's objectives and that, generally, there is an appropriate level of control for managing the majority of risks to the Company's objectives to a reasonable level.



The findings from the external audit of our 2018/2019 CRSA process are shown in full in section 3 of this Risk and Compliance Statement. This confirms that apart from the exceptions noted above, we have a full understanding of the Company's relevant obligations and appropriate systems and processes in place to run the business and identify and manage risks in a way that meets its relevant obligations. Jacobs made four recommendations, three of which are already addressed. We will include the action taken to address these in next year's statement. Last year Jacobs made four recommendations which we have worked hard to implement during the year. The recommendations from Jacobs and our response can be seen in Table 2.

Table 2

	Jacobs recommendation	The action we have taken	Position
1	Handover processes between Legislation Champions need to be improved.	We have created role statements which outline the responsibilities expected of Legislation Champions to improve continuity and improve the handovers between Legislation Champions.	Complete
2	In certain specialist areas it may be necessary to widen the source of expertise beyond Legal Services and the Legislation Champion, to ensure there is a comprehensive understanding of the obligations.	In addition to using external technical advice, Legislation Champions are encouraged to use peer support and in-house advisory services such as the Internal Audit, Company Secretariat and Asset Standards. Champions can also seek clarification and support through the Regulatory Issues Group.	Continuous improvement
3	Additional checks and controls should be put in place to monitor progress in achieving actions to introduce controls.	<p>We have an integrated assurance map, which records all the second and third line assurance carried out across Yorkshire Water. From this assurance map we can see that assurance is provided across all obligations.</p> <p>The Risk and Compliance team is working with Internal Audit on a gap analysis to identify missing controls. Actions to improve control will be agreed with Legislation Champions. The actions will be tracked weekly to make sure they are completed.</p>	On-going
4	The assessment of the range of teams needing to be aware of, and comply with, each obligation should be strengthened to ensure it is comprehensive.	<p>All Legislation Champions were reminded of their role to identify all teams needing to comply.</p> <p>The format and language of the CRSA process has been made clearer to make it easier for Legislation Champions to identify all teams needing to comply.</p>	Continuous improvement

We seek to continually improve the approach to assessing our compliance. In addition to the assurance processes noted above we have an annual “lessons learned” cycle. This involves all Legislation Champions, senior leaders and the teams providing assurance. The key action from the 2017/2018 lessons learned review was to introduce a risk-based CRSA process. The Head of Legal Services worked with key Legislation Champions, using the Yorkshire Water risk assessment matrix, to identify those obligations which pose the greatest risk to the Company from non-compliance. This allows for proportionate control, assurance and sign-off across all obligations.

We have appropriate systems and processes in the place to allow us to identify, manage and review our risks. Our risk management process identifies and escalates risk to be managed to the level reported

Effective risk management is central to achieving our objectives. It improves our ability to prepare for challenges and protects the value of the Company. Risk management is embedded in our normal business process and culture and is overseen by the Risk Committee. It provides a standard approach to make sure that risks, including potential non-compliance with our obligations, are identified and escalated in a timely way to be managed to an appetite at the right level of the business. Our risk management framework and the principal risks to achieving our objectives are detailed in our Annual Report and Financial Statements.

Regulatory obligations at risk

Based on 2018/2019 performance, and using our performance commitments as indicators of compliance, the Board has identified the following material risks to achieving specific performance commitments in future years:

- Drinking water quality compliance
- Drinking water quality contacts
- Energy generation
- Discharge permit compliance
- Pollution serious incidents (Category 1-2)
- Measure of customer service (SIM)

Drinking water quality compliance

Customers in Yorkshire expect that the drinking water we supply is of the highest possible quality. In 2018 we managed to achieve an improvement in the overall compliance figure from 99.953% to 99.962%. We have identified a risk of achieving the target of 100% compliance required.

Drinking water quality contact

In 2018/2019 our customers contacted us 7,964 times about the quality of their drinking water. This was a marginal decrease from 8,100 contacts in 2017/2018 however, we did not meet our 2018/2019 performance commitment target of 6,108 and there is a risk that we will not meet this target in 2019/2020. We have continued our programme of flushing water mains to remove sediments that may have built up over time. This programme as well as other initiatives has contributed to a further reduction in the number of times customers contact us about the quality their drinking water. The improvement wasn't enough to meet the extremely challenging target, but our initiatives continue to reduce the number contacts we receive.

Energy generation

We did not meet our 2018/2019 performance commitment of 12% and there is a risk that we will not meet this target in 2019/2020. Our consumed electricity increased in 2018/2019, from 598 gigawatt hours to 620 gigawatt hours from the previous year. 2018/2019, has seen a four-year high with over 70 gigawatt hours of electricity being generated. We continue to grow our use of renewable energy with another substantial investment in anaerobic digestion underway at the treatment works in Huddersfield. We are also embracing solar power and have recently completed the installation of solar panels on one of our offices as part of our programme to create an exemplar headquarters.

Discharge permit compliance

While it is our aim to achieve high levels of performance and drive towards 100% compliance, six of our 611 waste water treatment works did not meet their discharge permit conditions in 2018. This is a slight reduction in performance compared to 2017 when we had five failing waste water works. We will continue to manage the growing challenges to our compliance from population growth and more extreme and prolonged rainfall events.

Pollution Serious Incidents (Category 1-2)

There is a risk that we will not achieve our zero-incident target by 2019/2020. We recognise the need to go further and we are working to achieve the ambitious performance commitment for zero serious incidents by 2020. However, we also recognise that reducing the number of pollution incidents and consistently achieving this performance commitment will be challenging.

Quality of customer service (SIM)

Our overall score this year was 84.0, compared to 84.3 points last year which means we have not achieved our performance commitment which is to improve year on year. The SIM measure has ceased as of the 1st April 2019 as a regulatory measure and will be replaced with C-Mex in 2020. However, Ofwat have provided a proxy calculation for us to use to continue calculating our SIM performance.

Assuring our performance

We always want to provide our customers and stakeholders with information that they can trust and have confidence in. We understand that when we don't get this right we risk losing their trust and confidence. Our annual reporting processes are accredited to the British Standard ISO 9001:2015 Quality Management System. Compliance with the ISO 9001:2015 is externally verified.

To achieve confidence over the accuracy of the information we publish we apply 'three levels of assurance'. This best practice approach means that we gain more assurance in those areas with a higher risk of error associated with the information or with the publication. In addition to the routine assurance over our operational processes

and systems of internal control, we have two assurance processes to confirm the accuracy, consistency and transparency of our annual reporting:

- A data assurance process is in place to make sure that the data supporting the information we publish is accurate
- A wider assurance process ensures that the overall publication meets any guidance and that the publication is accessible and easy to understand.

Our assurance processes are detailed further within our Final Assurance Plan, which can be found here:

www.yorkshirewater.com/reports

We can confirm that we have followed these processes for the Annual Performance Report.

Each year we consult on, and publish our Risks, Strengths and Weaknesses Statement (www.yorkshirewater.com/reports). This provides information about the quality of the performance information that we publish from our customers and stakeholders and any risks they have identified. It also sets out any reporting risks we have identified from our own processes and controls or through our own internal and external audits. We then commit to actions to mitigate these risks and give confidence to our customers and stakeholders that we are responding to their concerns and they can trust the information we report.

In 2018/2019 we identified the following areas as high risk for reporting and we made sure these had additional focus through targeted assurance. You can read more about our targeted areas of assurance in section 5 of our Annual Performance Report. Our targeted areas are listed below.

- Performance commitments where the target was missed in the previous year
- Performance commitments where we are forecasting a financial incentive reward (at September 2018)
- Price control cost allocation
- Customer understanding and awareness of the information we provide
- Effect of our internal SAP programme on our reported information
- Meeting regulatory guidance
- Accuracy of information

Taking responsibility for resilience: managing our obligations

Our customers have told us that they expect us to deliver safe, affordable water and waste water services, and for us to play our part in protecting and enhancing the natural environment. Our ability to deliver on the commitments we have made to our customers is dependent on our business being resilient. We need the ability to cope with, and recover from, disruption and to anticipate trends and variability to maintain services for our customers and the environment, now and in the future.

As part of our long-term planning we have reviewed how we maintain and further enhance the levels of resilience we provide, and to ensure we meet our resilience duty. We are developing our approach to ensure that we can keep things running well and are responding to future challenges in the most sustainable way.

We do this through:

- Understanding the nature of customer expectations and the future level of demand
- Embedding systems and controls to understand the risks to achieving these expectations, including changing environmental factors, and using this information to manage our risks effectively
- Improving our ability to deal with the consequences of unplanned failures or crises
- Performing a long-term review of our financial resilience as reported in our Annual Report and Financial statements. Here is a link to our reports www.yorkshirewater.com/reports

In August 2018 we published our new whole-business resilience framework to help us further enhance our approach. This was supported by resilience experts at Arup and brings together a range of international best practice tools and processes to develop a system which enables quantification of our resilience over time, and which complements our existing approach to risk management. We have used the framework to complete a business-wide assessment of past, current and future practice against the British Standard. We are embedding the regular and ongoing use of our new framework within our standard business governance arrangements to support the process of continual improvement.

To make sure that we are following a best practice approach to resilience across all parts of the business and the essential services we provide, we have aligned our approach to British Standard 65000:2014 Organisational Resilience. We were the first water company to ask the experts at the Cabinet Office Emergency Planning College (EPC) to complete an independent maturity assessment against the standard in Spring 2018 to measure the effectiveness of our current practice and make recommendations for further improvements.

Section 3

Jacobs assurance letter

JACOBS

Yorkshire Water Technical Assurance Framework

Yorkshire Water Services

2018-19 Risk & Compliance

5 June 2019

Final



2018-19 Risk & Compliance

**Yorkshire Water Technical Assurance Framework**

Project No: 672454.AA.18.06
Document Title: 2018-19 Risk & Compliance
Document No.:
Revision:
Date: 5 June 2019
Client Name: Yorkshire Water Services
Client No:
Project Manager: Helen Twelves
Author: Helen Twelves

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Letter of Assurance

5 June 2019

Attention: The Board
Yorkshire Water
Western House
Western Way
Halifax Road
Bradford
BD6 2SZ

Subject: 2018-19 Risk and compliance statement – assurance statement

As set out in IN 19/06, Ofwat requires companies to publish an annual risk and compliance statement. The purpose of this is for the Board to confirm that the company:

- has a full understanding of all its relevant statutory, licence and regulatory obligations and has taken steps to understand and meet customer expectations;
- is meeting all its relevant statutory, licence and regulatory obligations; and
- is taking appropriate steps to identify, manage, mitigate and review any risks they face.

Companies are required to do this within the context of the Company Monitoring Framework (CMF).

In preparing the statement companies are required to consider their obligations in both legislation and their licences. As with other company information, it is important that stakeholders can have trust and confidence in your risk and compliance statement and to support this you have asked us to provide assurance in this area. Building on our approach from last year, we have reviewed the processes that support the declarations in your statement.

Our review focused on the approach and processes you follow to assess your compliance with your obligations, in particular we concentrated on your Control and Risk Self-Assessment (CRSA) process and documentation. You have continued to develop the process and have made changes in response to your annual internal lessons learned process. You have introduced a risk-based process allowing for proportionate control, assurance and sign-off informed by identifying those obligations which pose the greatest risk to the Company from non-compliance.

You have made changes to the process in response to the opportunities for improvement we noted in our 2017-18 assurance letter. These improvements include creating role statements which outline the responsibilities of Legislation Champions, and putting in place gap analysis supported by weekly action tracking to identify and address missing controls. We noted last year that there are some obligations, for example, Competition Act, where whilst the Legislation Champion and CRSA sign off is by a single business area, the compliance risk is wider and other areas need to be aware of the obligation and the associated compliance risks. You have made the format and language of the CRSA clearer to make it easier to identify all teams needing to comply.

We also provided advice on the content and drafting of your risk and compliance statement. We did not suggest any material changes to the draft. We note that your statement includes a section describing the steps you have taken to meet customer expectations and that this year you have included the actions you are taking to address our prior year recommendations.

As part of our risk based approach we met with Sarah Lubbe to review the CRSA process in her roles as both a member of the Risk and Compliance team, and as a Risk Champion, and with Rachel Lindley, Head of Risk and Audit. We also met with two Legal Champions to review their experience of the CRSA sign off process for two obligation areas - Reservoir Safety Act 1975 and Floods and Water Management 2010, and the Competition Act.

2018-19 Risk & Compliance



We are aware that you do have processes to manage compliance with other obligations and duties, but that they are not explicitly covered as part of the CRSA process and therefore are not part of your risk and compliance statement. We did not review the process you use to assess whether non-compliance with legislation falls below your risk appetite. Therefore, we did not consider whether the risk threshold and risk appetite was appropriate for the Appointed Business as a whole or for the various Appointed Business price controls.

Observations

Our main observations are as follows:-

- During our review we evidenced that as a company you have established appropriate systems and processes for identifying, managing, mitigating and reviewing risk;
- You recognise the importance of risk management, and have an established Risk Committee to monitor and manage risk, which is then cascaded through the business;
- In our discussions with Legislation Champions we found that the process was well understood and had been communicated across the business. Legislation Champions stated that the CRSA process was smoother than in previous years and that they found the additional support provided by the Risk and Compliance team this year helpful.
- Within the CRSA process we observed evidence of horizon scanning to identify new risks, for example, the Legislation Champion for Reservoir Safety Act 1975 and Floods and Water Management 2010 working with DEFRA, EA and ICE; and
- For the Competition Act the focus of your recent internal compliance work has been retail market opening and the operation of the market. You are also developing a training programme for the areas of the business which deal with NAVs. The overall Competition Act CRSA sign off is supported by staff training tailored to individual business areas and ad hoc checks of compliance. There is no formalised programme, other than for the retail market, to ensure that the policies are actually being followed and are compliant, and the T2 manager signing off compliance was not able to evidence in business areas other than his own that Competition Act policies were being followed and were compliant. The team also noted that there is no annual review process in place to ensure competition related policies are regularly reviewed and up to date.

Recommendations

On the basis of our work on your assurance and from our experiences working with other water companies, we are able to identify a number of recommendations that would embed best practice and help develop your processes further. We recommend that:

- your risk and compliance statement for 2018-19 should again note exceptions and areas for improvement including the actions you are taking ;
- where areas of exception and potential compliance risks have been identified they are noted and addressed in your assurance plan;
- your risk and compliance statement links to your APR where you can provide further information on your performance; and
- for those obligations where a large number of teams or individuals are required to be compliant that you consider how your internal compliance work can help to provide evidence to support CRSA sign off.

We therefore consider that, other than where indicated otherwise in this letter we provided:

- **you have a full understanding of the company's relevant obligations (as you have interpreted the scope required for this exercise); and**

- **you have appropriate systems and processes in place to run your business and identify and manage risks in a way that meets the relevant obligations (as you have interpreted the scope of these).**

Yours sincerely

Chris Turner

Technical Assurance Director

01625 547609

chris.turner@jacobs.com

Appendix 1.

Financial auditor's opinion



Audit Opinion for the Regulatory Accounting Statements contained within the Annual
Performance Report 2018-2019

**Independent Auditors' report to the Water Services Regulation Authority (the WSRA)
and the Directors of Yorkshire Water Services Limited**

Report on the audit of the Regulatory Accounting Statements

Opinion

We have audited the tables within Yorkshire 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 water and wastewater (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 water 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), the revenue analysis & wholesale control reconciliation (table 2I), the infrastructure network reinforcement costs (table 2J), the infrastructure charges reconciliation (table 2K) and the related notes.

We have not audited the remaining tables in the annual performance report.

In our opinion Yorkshire Water Services' Regulatory Accounting Statements within the Annual Performance Report 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(s), as defined in RAG 3.11, appendix 2).

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(s), 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



Audit Opinion for the Regulatory Accounting Statements contained within the Annual Performance Report 2018-2019

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 United Kingdom Generally Accepted Accounting Practice (“UK GAAP”). Financial information other than that prepared on the basis of UK GAAP 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 in Section 8. Regulatory Information of the Annual Performance Report have been drawn up in accordance with Regulatory Accounting Guidelines with a number of departures from UK GAAP. 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 for the Regulatory Accounting Statements



Audit Opinion for the Regulatory Accounting Statements contained within the Annual Performance Report 2018-2019

As explained more fully in the Statement of Directors' Responsibilities, 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(s), as defined in RAG 3.10, 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.

Auditor's 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.



Audit Opinion for the Regulatory Accounting Statements contained within the Annual
Performance Report 2018-2019

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 12 July 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.

A handwritten signature in blue ink that reads "Deloitte L".

Deloitte LLP
Statutory Auditors
Leeds, United Kingdom
15 July 2019

Appendix 2.

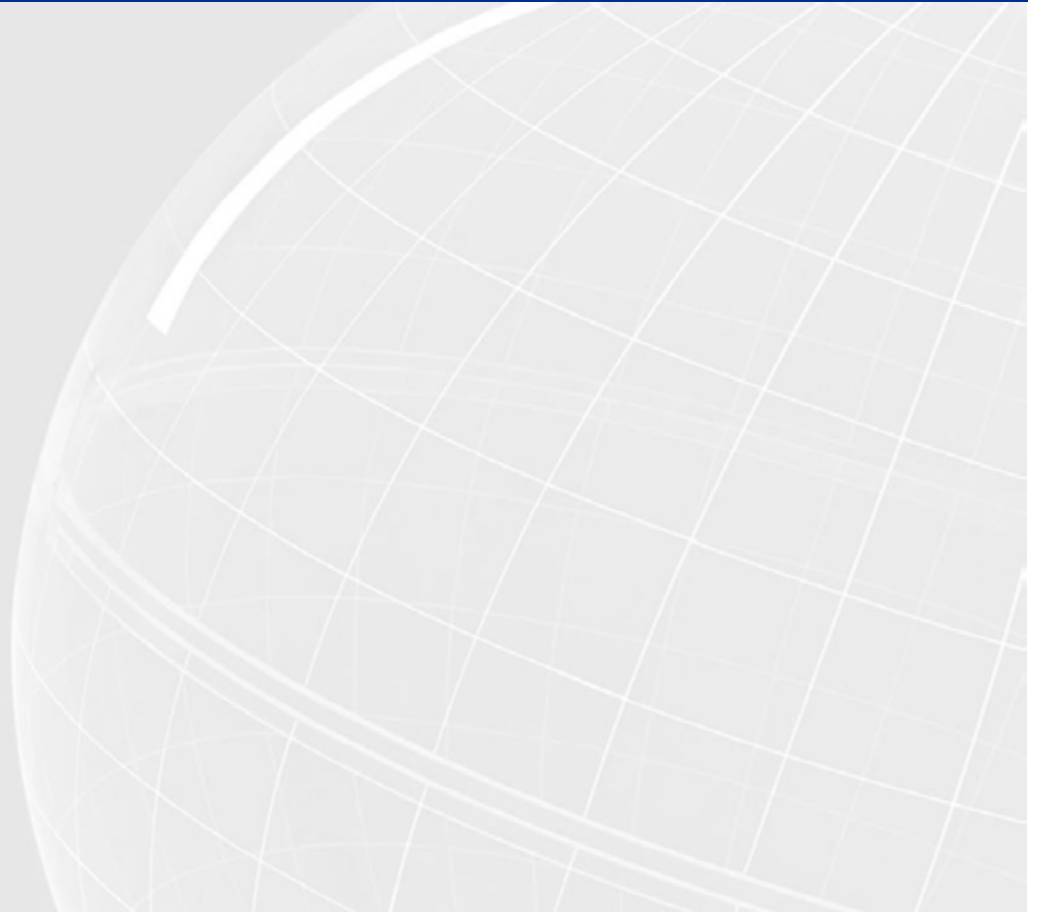
Technical assurance statement

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Halcrow Management Sciences Limited

**YORKSHIRE WATER SERVICES
ANNUAL PERFORMANCE REPORT 2019
TECHNICAL ASSURANCE REPORT**

July 2019



Yorkshire Water Services

Annual Performance Report 2019

Technical Assurance Report

Document Control

Title: APR19_Assurance Report

Project: 672454/APR19

Version	Issued to	Date	Prepared by	Checked by	Approved by
1.0	YWS – Draft for inclusion in Board papers	21 June 2019	C Morley	CWJ Turner	CWJ Turner
2.0	YWS – For presentation at Board meeting	8 July 2019	C Morley	CWJ Turner	CWJ Turner
3.0	YWS – Final version for APR submission	9 July 2019	C Morley	CWJ Turner	CWJ Turner

Halcrow Management Sciences Limited is part of Jacobs.

Halcrow Management Sciences Limited has prepared this report in accordance with the instructions of Yorkshire Water Services for their sole and specific use. In these circumstances and to the fullest extent permitted by law, we do not accept or assume responsibility for others who use, for whatever purpose, any information contained herein.

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Yorkshire Water Services
Annual Performance Report 2019

Technical Assurance Report

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1. Introduction

Halcrow Management Sciences (HMS) was appointed in January 2016 by Yorkshire Water (YWS) to provide external technical assurance of their regulatory and public domain performance reports.

This Statement covers our work in providing independent technical assurance on aspects of YWS' Annual Performance Report 2019.

HMS is a Jacobs Company but operates independently to ensure confidentiality and to avoid conflicts of interest. Neither HMS nor Jacobs has other material interests or contracts with YWS or the Kelda Group which would impede an impartial opinion.

All water companies are required by Ofwat to submit an Annual Performance Report to demonstrate compliance with their separate price controls. This includes specific information on progress on delivery of customer outcomes, service levels, transparent cost information and financial performance.

The reports are required to be accessible to all stakeholders so that they show how the sector is delivering for its customers, environment and wider society and in this regard, Ofwat has provided a series of standard templates and accompanying guidance for the performance commitments and incentive mechanisms, for data on operational and capital activities and for other metrics relevant to their comparative analyses.

Each company's board is accountable for the quality and transparency of the information they provide and for implementing the assurance procedures required to meet all their legal and regulatory obligations.

2. Role and Scope

HMS has been appointed to provide an independent review of YWS' compliance and governance processes covering the key technical information presented in or supporting their regulatory performance and public domain information reports.

The scope of our APR19 work has been determined by YWS and has included:

- Performance metrics on Tables: 3A, 3B, 3D and 3S.
- Non-financial metrics on Tables: 4A, 4D&4E (unit cost information), 4P, 4Q, 4R, 4S, 4T, 4U
- Bioresources Table
- Capex components of Tables: 2K, 4D, 4E, 4J, 4K, 4L, 4M
- Opex on Table 4O
- Household and Non-Household Revenue Tables: 2F, 2G, 2H

Generally, our scope covers:

- General information
- Customer service information
- Operational activities and performance in AMP6 against PR14 and business targets
- Networks and treatment data
- Capital expenditure allocations to revenue controls and business units, to investment categories and to measures of success
- Other miscellaneous metrics

The guidance for completing this information is predominantly produced by Ofwat. The following hierarchy is deemed to apply:

- Relevant Regulatory Accounting Guidelines: version 4.08
- APR19 table templates and guidance
- Performance commitments and definitions agreed with Ofwat for the AMP6 period, or as subsequently superseded
- Ofwat's most recent 'June Return' guidance (2012)
- YWS procedures, definitions and assumptions which should where relevant, be compliant with the guidance hierarchy above
- Reasonable and appropriate judgement

3. Approach

3.1 Process

Our approach is summarised in the following steps:

1. Agree Scope
2. Produce and agree Assurance Plan
3. Review preliminary topic information
4. Issue Audit Notification Forms – (Agenda for audit)
5. Undertake Face-to-Face Audits or, where necessary and appropriate, by ‘Skype’
6. Provide Initial Feedback
7. Summarise Audit Findings
8. Close out material issues – through iteration between auditor and YWS specialists, escalating through both organisations where appropriate to agree, as appropriate: adjustment to reported information; future action plans; or additional statements which provide adequate transparency of the issue.
9. Presentations and preparation of Reports and Assurance Statements.

3.2 Assessment

We use the following ‘RAG’ coding to simply highlight the areas of concern

Figure 1 - RAG Criteria used in HMS Assessments for reporting compliance against the guidelines

Key to Audit RAG status	
R	Material concerns over the validity of the reported information
A	Potential material concerns over reported information
B	Content with reported information but supporting data needs completion/ noting/or future improvements required
G	No material exceptions and compliant with the requirements

Figure 2 - Example of Tests applied to APR Data and Performance Commitment information

Criteria	RAG	Assessment
Independent Review of Performance and Reporting	Green	Performance good. Reporting process well managed
Methodology	Green	Methodology consistent with current process, control points identified and understood
Assumptions	Green	Assumptions reasonable and appropriately applied
Source Data	Green	Source data is clearly identified, complete beyond material concern, well managed through to accurate systems input
Clarity of Audit Trails	Green	Detailed and comprehensive audit trail to all numbers available
Confidence Grades	Green	Confidence grade appropriate and rationale clearly documented
Governance	Green	Responsibilities for integrity of data and commentary clearly defined. Good evidence of engagement and of final sign-off.

PC Criteria	RAG	Assessment
PC Performance Data	Green	Performance figures are accurately carried forward to the Performance Commitment and correctly calculated in accordance with Ofwat’s final PR14 methodology.

4. Findings

Below we highlight the key findings and exceptions:

- The reported data is materially compliant with Ofwat's Reporting Requirements (Regulatory Accounting Guidelines, APR19 table guidance, 2014 Final Determination or superseding definitions, or June Return definitions, as appropriate)
- The tables, commentaries and statements provide a fair and balanced overview of the Company's 2018/19 circumstances and performance
- Procedures and assumptions are generally reasonable and well embedded, well documented and appropriately implemented
- YWS staff were well prepared for the audits, knowledgeable, helpful and receptive
- There is better evidence of senior management engagement and of improved governance being applied. Continued improvements in these regards would benefit the assurance process

Summary of Issues remaining at audit closure		RAG Status		
Issue Group	Issue category	R	A	B
1	Minor concerns over data accuracy or forecasts	-	-	3
2	Methodologies – complex and/or in need of improvement	-	-	29
3	Confidence Grades – improvements recommended	-	-	4
4	Poor evidence of QA checks, document control, sign-off	-	-	10
5	Data not confirmed as final	-	-	2
6	Enhancements to APR commentary recommended	-	-	1
7	Assumptions – amendments/improvements suggested	-	-	4
8	Ambiguity in guidance - clarification required	-	-	3
9	Poor source data quality and/or handling improvements required	-	-	7
10	Acknowledging performance issues	-	-	4
	Totals	0	0	67

RED issues There are no RED status issues remaining.

AMBER issues There are no AMBER status issues remaining.

BLUE issues Whilst a substantial number of issues found during the audit process have been identified and satisfactorily resolved, there remain several additional areas where further improvements have been recommended. The issue categories with the more significant scores above are similar to the findings last year.

Comparisons with previous years on a numerical basis are not appropriate as the focus of audit has changed at YW from CCC reporting to APR reporting and the APR submission contains many new areas for reporting in APR19. This latter point is likely to be the main cause of the increase in issues identified on the methodologies, which have received external scrutiny for the first time this year.

Independent Technical Assurance Statement

Halcrow Management Sciences has been appointed by Yorkshire Water Services to provide independent technical assurance of their regulatory submissions. Our work for the Annual Performance Report 2019 has included:

- Performance metrics on Tables: 3A, 3B, 3D and 3S.
- Non-financial metrics on Tables: 4A, 4D&4E (unit cost information), 4P, 4Q, 4R, 4S, 4T, 4U
- Bioresources Table
- Capex components of Tables: 2K, 4D, 4E, 4J, 4K, 4L, 4M
- Opex on Table 4O
- Household and Non-Household Revenue Tables: 2F, 2G, 2H

Through a series of meetings and information exchanges, we have reviewed and tested the methodologies, processes and supporting evidence on which the data and statements in the Annual Performance Report 2019 are based, and we have considered the material accuracy of these statements, the performance data presented and the conclusions drawn by Yorkshire Water Services.

Based upon our assessment of Yorkshire Water Services' performance and the supporting information we have reviewed, with only minor and non-financially material exception, we conclude that:

- *the statements of non-financial numeric measures are consistent with our assurance of the supporting information, which is appropriately robust;*
- *the Company's explanations of their activities and performance are reasonably based.*

Overall, the information provided in the Annual Performance Report 2019 provides a fair, balanced and understandable summary of the Company's 2018/19 circumstances and performance.

CWJ Turner

Director
Halcrow Management Sciences Limited

July 2019

Appendix 3.

Accounting Separation Methodology Statement

Introduction

The economic regulator of England and Wales (Ofwat) requires water companies to publish an Annual Performance Report (APR). The objective of the APR is to provide clear information regarding delivery of customer outcomes, performance commitments and financial performance. This statement provides an overview of the processes, systems and assurance that Yorkshire Water uses to ensure the data used to complete the financial tables in the APR is robust and meets all of Ofwat's requirements. This document includes the enhancements made to processes this year and details the methods of the allocation of totex costs between price controls, as well as the allocations for the upstream services described in Section 8 of the APR. The contents of this document are intended to help stakeholders understand the robustness and method of producing our accounting statements, with particular focus in Price Control Units (Annual Performance Report Section 8) and Wholestream upstream services (Annual Performance Report Section 8).

In accordance with RAG 3.11, the document is separated into the following three sections:

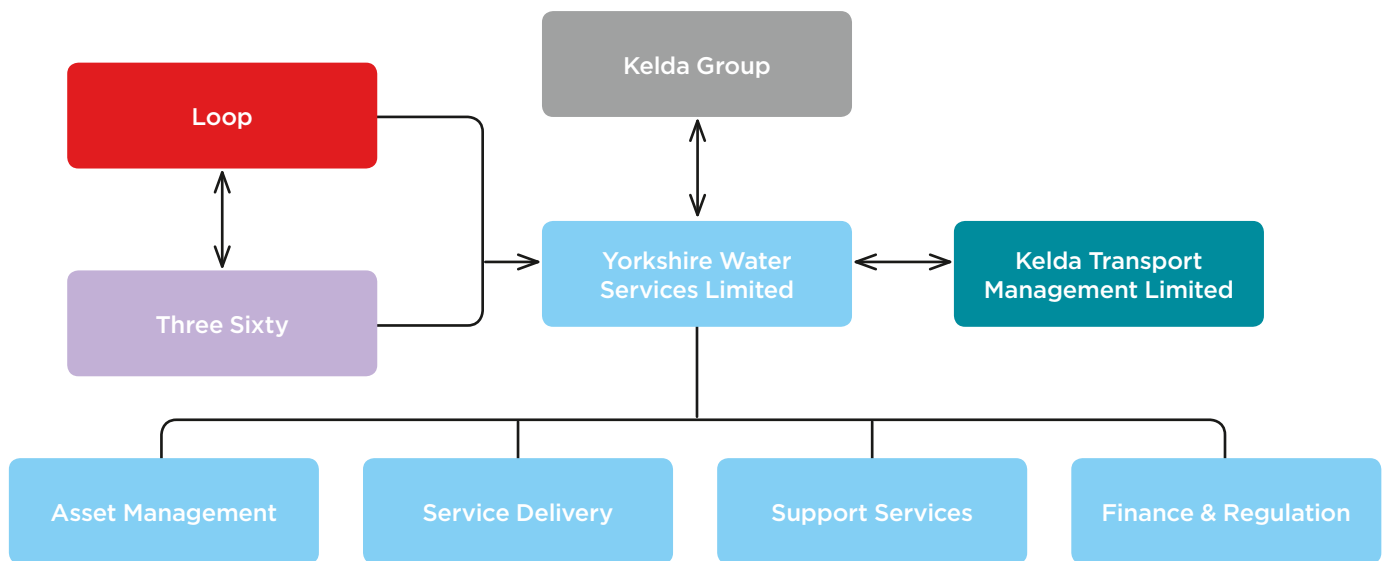
- High Level Overview
- Price Controls Units
- Wholestream Upstream Services

High Level Overview

To explain the process for producing the disaggregated financial cost and asset data, the company structure, financial systems, and accounting standards, need to be understood. This methodology statement includes information on:

- Business structure
- Outsourced functions
- Regulatory requirements
- Governance
- Systems and processes

Business Structure



The company is managed in four separate Business Units, which are supported by three sister companies.

Yorkshire Water Service Limited is the legal entity that includes all appointed costs, which are defined to be all regulated costs within the business.

These are our three sister companies

- Loop Customer Management Limited (Loop) is a sister company to Yorkshire Water that manages most retail elements of customer service (excluding meter reading) and some wholesale customer service activities. Loop provides services to Yorkshire Water for domestic Retail services and wholesale customer service and to Three Sixty for non-household (NHH) customers.
- Kelda Transport Management Limited (KTML) is a sister company to Yorkshire Water which manages the heavy goods vehicles for the wholesale business, which is mainly the liquid sludge transport vehicles. KTML provides this service to Yorkshire Water at cost in the form of a management fee charged throughout the year.
- Three Sixty Water Limited (Three Sixty) is a sister company to Yorkshire Water that has a contract with Yorkshire Water to manage non-household retail services for Yorkshire Water. Further details on the outsource agreement are stated within the 'outsourced function' section opposite. Non-Household is a function that has a small number of dedicated staff to manage Yorkshire Water as the incumbent retailer entering into the competitive market. Further details of this arrangement are stated opposite. It is anticipated that this company is sold in the near future.

These are our four separate Business units

- Asset Management is a business unit within Yorkshire Water that sets asset policy and manages the delivery of the capital programme, which is predominantly delivered through the use of external third party contractors.
- Service Delivery is a business unit within Yorkshire Water and includes the operation and maintenance of the wholesale assets, associated wholesale customer services and meter reading. The operational business units will be split between clean water and waste water service delivery in the next reporting year, with a further introduction of a new directorate customer experience.
- Support Services encompasses a number of business units which provide non-operational support to the group including IT, Finance, Human Resources, Communications, Shared Services, Procurement and Facilities Management. Some of these functions are used by other group companies, as described further within the 'outsourced functions' of this document.
- Finance & Regulation is a business directorate within Yorkshire Water that includes tax & treasury, Finance Business partnering, financial accounting and control risk and assurance, legal and the regulatory team that undertakes price submissions and tariff setting.

Outsourced functions

A significant proportion of Retail activities are performed by Loop and Three Sixty, which are both UK based companies. All the costs associated with these contracts are charged to Yorkshire Water via an annual contract fee. Yorkshire Water, Loop and Three Sixty companies are wholly owned subsidiaries of Kelda Group Limited. For some customers, billing and cash collection is performed by other water companies, typically on the boundary of the Yorkshire Water region where one company provides water services and another provides sewage services. Yorkshire Water also has arrangements with a number of local authorities for them to collect water charges on behalf of Yorkshire Water.

These arrangements have been in place since April 2016 when Yorkshire Water signed an outsourcing agreement with Three Sixty specifically for Non-Household customers. This contract was in preparation of the market opening for non-household (NHH) customers, and created an arm's length agreement between retail and wholesale. The business strategy is to achieve a withdrawal from the NHHR market, either as direct provider or as a support service provider. Three Sixty contracted with Loop's customer service function to fulfil Yorkshire Water's requirements.

The table below shows the activities that were outsourced to third parties by Yorkshire Water and Loop for the year ended 31 March 2019.

Outsourcing company	Function outsourced	Outsourced to
Loop	Cross water boundary billing, payment handling and debt management	Other water companies
Loop	Some billing, payment handling, and debt management	UK based local authorities and housing associations
Yorkshire Water	Customer service, billing, payment handling and debt management - domestic customers only	Loop
Yorkshire Water	Customer service, billing, payment handling and debt management - NHH customers only	Three Sixty
Yorkshire Water	Capital delivery	UK based contract partners
Yorkshire Water	Below ground network repair	UK based contract partners
Yorkshire Water	Operator License and the servicing costs for the Heavy Goods Vehicles (HGV) and plant	Kelda Transport

Yorkshire Water receives services from associates within the Kelda Group. These charges are for corporate functions including areas such as Group Finance and Internal Audit.

Yorkshire Water also charges Kelda Group / associates for any support service activity. The cost and revenues associated with this are allocated to non-appointed activities and follow RAG 5 guidelines.

All transactions that have occurred in the year between the appointed business (Yorkshire Water) and associated companies are disclosed in the Appendix 4: Disclosures.

Regulatory Requirements

The data collated and represented in the tables within the APR follow Ofwat's Regulatory Accounting Guidelines (RAG's). The tables show the costs, revenues, assets and liabilities in a variety of formats and levels of granularity, for the different activities to deliver the appointed services provided by Yorkshire Water. There are four binding price controls; water wholesale, wastewater wholesale, retail household and retail non-household. Detailed below is Yorkshire Water's approach to applying these guidelines.

The information presented in this document is limited to Yorkshire Water and when appropriate the ultimate parent company Kelda Holdings Limited.

This report has been prepared in accordance with the following documents published by Ofwat:

- Information Notice (IN) 19/03 'Regulatory Accounting Guidelines 2018/2019' and IN 19/06 'Expectations for monopoly company annual performance reporting 2018/2019'
- RAG changes following the January 2019 consultation
- 2019 Annual Performance Report tables
- RAG 1.08 – Principles and guidelines for regulatory reporting under the new 'UK GAAP' regime
- RAG 2.07 – Guideline for the classification of costs across the price controls
- RAG 3.11 – Guideline for the format and disclosures for the annual performance report
- RAG 4.08 – Guideline for the table definitions for the annual performance report (inclusive of appendices)
- RAG 5.07 – Guideline for transfer pricing

Within RAG 2.07, Ofwat has set out cost allocation principles that should underpin the attribution and allocation of costs within the APR. Detailed below are the principles applied, together with Yorkshire Water's response on the approach that has been taken and applied. The Ofwat principles are shown in italics on the following pages.

Ofwat principle

Transparency: *The cost attribution and allocation methods applied to allocate costs within the Annual Performance Report need to be transparent. This means that the costs and revenues apportioned to each service or segment should be clearly identifiable. The cost and revenue drivers used within the system should also be clearly explained to enable robust assurance against this guidance.*

Yorkshire Water response

- Costs are allocated in a clearly transparent way via cost centres which map to the regulatory definitions within the APR. The cost centres are clearly identified within the company's accounting system (SAP) allocating them directly to the activity of work carried out.
- We seek to minimise manual adjustments to information in SAP. Where overhead costs cannot be attributed to regulatory specific cost centres at source, the allocations are made using Ofwat guidance and reviewed in detail and agreed by the relevant finance and operational experts. However, throughout the several assurance processes once the regulatory accounts are completed, some manual adjustments are inevitable to ensure that any changes highlighted through this process can be captured and then included in the final financials. However, these changes then go into a lesson learnt process to ensure that they can be provided for through the system for future years.
- Cost drivers used are consistent with Ofwat guidance and are set out in the Price Control and Upstream services sections.

Ofwat principle

Causality: *Cost causality requires that costs (and revenues) are attributed or allocated to those activities and services that cause the cost (or revenue) to be incurred. This requires that the attribution or allocation of costs and revenues to activities and services should be performed at as granular a level as possible. Allocating costs in relation to the way resources are consumed provides a means of building up service and product costs. This approach views a business as a series of activities, each of which consumes resources and, therefore, generates costs. An activity based approach should result in the majority of the total costs being attributed or allocated on a meaningful basis. All operating and capital costs must ultimately be attributed or allocated.*

Yorkshire Water response

- Cost centres are aligned to the relevant regulatory service allowing reports to be run in the required format for the tables in accordance with Ofwat's Regulatory Accounting Guidelines. Checks are made to ensure all cost centres are included and that the balances reconcile to the financial statements.
- Where possible, costs are allocated directly to service (e.g. Water Treatment). If allocation of costs is required, because the cost relates to more than one service, the allocation methods used are chosen from the suggested methods in the Ofwat guidance. Further details are provided in the Price Control and Upstream sections.
- The documented procedures and resulting reported costs attributed to price controls and upstream services are then reviewed by the appropriate finance expert and approved by the senior manager in that area.

Ofwat principle

Non-discrimination: Companies should ensure that no undue preference or discrimination is shown by water undertakers and sewerage undertakers in relation to the provision of services by themselves or other service providers (this is consistent with the new duty in Section 2 of the Water Industry Act 1991 that has been (or, in relation to Welsh water companies, will be) inserted by section 23 of the Water Act 2014). Therefore, the attribution or allocation of costs and revenues should not favour any price control unit or appointed/non-appointed business and it should be possible to demonstrate that internal transfer charges are consistent with the prices charged to external third parties.

Yorkshire Water response

- The attribution of costs and revenues are allocated consistently across all business units and price controls, in compliance with RAG 5.07 transfer pricing guidance.

Ofwat principle

No cross subsidy between price controls: Following the introduction of separate binding price controls at the 2014 price review, companies cannot transfer costs between the PR14 price control units in setting prices and preparing the APR. The revenue allowance for each price control is determined by the costs specific to that particular price control. Rules on transfer pricing are detailed in RAG 5.

Yorkshire Water response

- Costs are allocated based on the activity and services that cause that cost (or revenue) to be incurred.
- Costs are allocated consistently across all business units and price controls in compliance with RAG5 transfer pricing guidance.
- Within the internal governance of preparing these statements there is a high degree of segregation of duties.

Ofwat principle

Objectivity: The cost and revenue attribution criteria need to be objective and should not intend to benefit any price control unit or appointed/non-appointed business. Cost allocation must be fair, reasonable and consistent.

Yorkshire Water response

- To ensure no favour is given to any business unit, costs are directly allocated where possible and where this is not possible an objective measure (in line with Ofwat's principles) is used to allocate costs.
- Objective cost allocation measures used are measures which are reported internally or externally, e.g. number of customer contacts, number of FTEs and are in some cases subject to external assurance.

- The attribution of costs and revenues are allocated consistently across all business units, price controls and non-appointed in compliance with RAG 5 transfer pricing guidance.

Ofwat principle

Consistency: Costs should be allocated consistently by each company from year to year to ensure meaningful comparison of information across the sector and over time; that regulatory incentives from comparative analysis apply fairly across companies; and to enable monitoring of companies' performance against price control assumptions. Any changes to the attribution and allocation methodology from year to year should be clearly justified and documented in the Accounting Separation Methodology Statement.

Yorkshire Water response

- The tables are prepared in a consistent manner each year in order to enable meaningful comparison of information over time. The underlying company structure and SAP financial systems have remained the same for many years. However, regulatory guidance is refined annually and opportunities for improvements arise. Where these changes are necessary to improve accuracy and compliance, changes are made and detailed within this statement in the changes to methodology section.
- Any changes as detailed in Information Notices or company specific letters issued by Ofwat are implemented.

Ofwat principle

Principal use: Where possible, capital expenditures and associated depreciation should be directly attributed to one of the price control units. Where this is not possible as the asset is used by more than one service, it should be reported in the service of principal use with recharges made to the other services that use the asset reflecting the proportion of the asset used by the other services.

Yorkshire Water response

- Assets, where possible, are allocated to the service in which they are required for use and any associated operating costs and depreciation will be charged to that service.
- Assets which are used by more than one service area are allocated to a single business unit of principal use and then recharged to the relevant business unit. Included in this category are a number of general and support assets that do not have a single principal use service, for example the financial system and the IT infrastructure. These assets have been allocated to waste water network plus and then recharged to other business units using an appropriate cost driver. The recharges are included in table APR table 2A and are detailed on the next page in the capital recharge table:

Asset category	Recharge basis	Total recharge (£'m)	Water resources (£'m)	Water network plus (£'m)	Wastewater network plus (£'m)	Bioresources (£'m)	Retail household (£'m)	Retail Non-household (£'m)
Information technology	FTE	15.440	0.367	7.389	6.028	1.450	0.179	0.027
General offices	FTE	2.011	0.041	0.834	0.680	0.164	0.254	0.038
Operational assets not directly allocated	FTE	5.264	0.115	2.319	1.892	0.455	0.420	0.063
Research & development	FTE	0.549	0.012	0.242	0.197	0.047	0.044	0.007
Regulation	FTE	3.072	0.074	1.486	1.212	0.292	0.007	0.001
Scientific services	FTE	0.002	0.000	0.001	0.001	0.000	0.000	0.000
Stores/ Depots	FTE	0.106	0.002	0.047	0.038	0.009	0.009	0.001
Telemetry	FTE	1.481	0.032	0.652	0.532	0.128	0.119	0.018
Vehicles	FTE	3.000	0.072	1.455	1.187	0.286	0.000	0.000
Retail	FTE	2.099	0.000	0.000	0.000	0.000	1.826	0.273

- Whilst the assets follow principle use, with depreciation recharged to other price controls, our Management & General support capital programme expenditure programme continues to be proportionately allocated to the Water and Waste Water programmes in line with the price control units section on the following page. This seems practical as the alternative would be to capitalise each asset separately and hence we apportion expenditure using the same approach to ensure consistency.

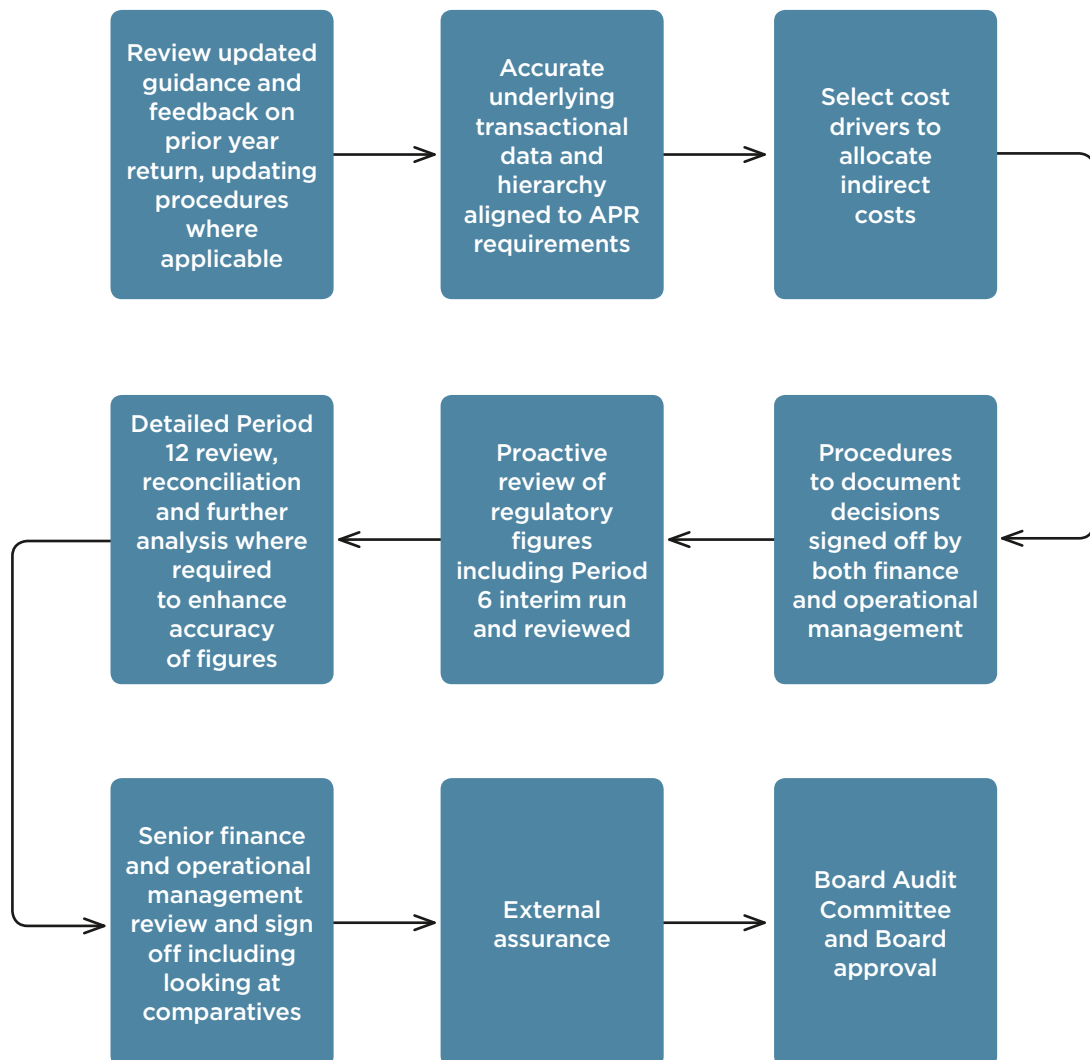
Governance

The APR involves experts from across the business to pull together the required financial and regulatory information.

The key teams involved are as follows:

- Finance and Regulation
- Operational Management at both senior and local level
- Board Audit Committee
- Yorkshire Water Board

An overview of the process is set out below.



Roles and responsibilities

Regulation

- Understand Ofwat guidance.
- Agree levels of assurance and process.
- Set assurance timetable in line with Board dates.
- Co-ordinate the collation of the APR document and supplementary documents.
- Publish and submit all regulatory documents.

Finance

- Understand Ofwat guidance and ensure procedures align with the requirements and that those procedures are approved by operational experts
- Review of interim position of elements or regulatory accounts to assist operational teams to make decisions for investment and/or efficiency
- Management of underlying financial transactions, cost centres and cost drivers ensuring all values reconcile and all costs are included within the regulatory accounts
- Virtual finance team dedicated to form APR finance working group which meets on a weekly basis to ensure compliance with RAGs and how to generate these changes through the corporate system
- Review and sign off cost drivers with Operational Managers as part of the annual business planning process but also as required if there are relevant changes
- Attendance at the regulatory accounting working group to ensure compliance and informed on the latest regulatory accounting guidelines
- Consolidate and report annual performance tables including methodology statement

Senior and Operational Managers

- Review and approve procedure notes
- Review and confirm the data has been produced in a manner consistent with the procedures
- Review and confirm the data meets the relevant reporting requirements
- Review and confirm the data has had a sense check by the Data Manager
- Understand and explain any significant changes or trends in the data
- Confirm appropriate Confidence Grades (where required) for the reliability of the data

Audit & Assurance

Once completed, the Annual Performance Report with its data is subject to an external financial audit and external assurance. The outcomes of these are stated in the assurance section of this report.

Board review

Board Audit Committee and Yorkshire Water Board review and sign-off the audited report before publication.

Systems and processes

Yorkshire Water uses SAP as the corporate financial system, and is the only system used for producing the regulatory accounts. The system is long established, with more modules being implemented since the original financial SAP system went live in 2000. Cost centres have been setup for all sites and network location, and where possible, costs are coded directly to sites as purchase orders are raised. Instead of using an external reporting tool to disaggregate the data, the indirect cost assessment facilities in SAP are used to allocate costs that cannot be directly coded to an upstream service or price control.

An example of indirect costs would be the opex costs of our IT infrastructure which need to be apportioned across our cost base. By using the cost assessment process on SAP directly to site and regulatory cost centres, it gives the advantage of providing operational and financial users differing views of the same data set. The management, statutory and regulatory accounts are extracted from the same source data giving 'one version of the truth'.

The introduction of a new SAP system which has gone live on 1st July 2019 is currently reviewed and an understanding of some modules to see how they can further support the cost assessment process within SAP to ensure accuracy of allocation of costs amongst price controls and upstream services. The primary hierarchy for the new SAP system from a financial perspective will be the regulatory accounts hierarchy, which will further enhance the level of focus on the regulatory accounts across all teams.

The APR financial tables have been produced on SAP from cost capture information that has been set to include price control data wherever possible. The current operating structure and management accounts of Yorkshire Water have been deliberately structured similar to the price controls. This minimises further data processing and disaggregation into Ofwat's price controls, with operational managers managing direct costs and budgets that are similar to Ofwat's Price Controls.

Price Control Units

The principles and guidance set out in RAG 4.08 have been applied in the preparation and completion of the regulatory accounting tables.

There are four price controls specified by Ofwat (water wholesale, waste water wholesale, retail household, retail non-household) over which all costs in Yorkshire Water appointed business must be allocated and presented for the purposes of Ofwat regulatory reporting.

The methodology for allocation of total operating expenditure (totex) across price controls is summarised below.

Capital expenditure

Capital expenditure data is managed and maintained on the corporate financial system (SAP). Separate projects are raised for each discrete work instruction, and each project is allocated investment categories which are attributes that describe the regulatory reason and the price control and wholesale upstream service.

Where a project is given more than one regulatory driver for the investment, two or more investment categories with appropriate percentages are used to calculate the allocation to each price control and upstream service. All project investment category allocations are reviewed by the regulatory programme assurance team (within the regulation department), and system controls prevent any project going live until these positions have been assured.

Monthly, this expenditure is reported to Board Investment Committee (BIC), who holds delegated authority from the Yorkshire Water Board to actively manage the capital programme and the associated regulatory and customer performance commitments. This includes intervention approvals of projects greater than £1m.

The investment categorisation used for price reviews, cost assessments and annual reporting has been in place for many years, and is reviewed as necessary, and is in alignment with the latest regulatory guidance. An analysis and explanation of capital expenditure by price control and variance from the previous year are detailed in Section 7, table 4D and table 4E.

Operating expenditure

Operating expenditure data is managed and maintained on the corporate financial system (SAP). On a monthly basis appointed operating costs are reported to the Yorkshire Water Board.

For annual reporting purposes, all information is prepared in SAP in accordance with FRS 102. Once these values have been reviewed and approved by senior managers, the cost assessment functionality within SAP is used to allocate overheads into the site and regulatory price control cost centre hierarchy, including any adjustments required by RAG 1.08. Further details of the methodology for the allocation of costs over price controls is detailed in Tables 1 to 6 attached to this report.

An analysis and explanation of operating expenditure by price control and variance from the previous year are detailed in Section 8, table 2B.

The RAG 4.08 principles and guidance have been reviewed and applied when completing the tables within the APR.

Yorkshire Water do not have any sites that cover more than one price control. However, power costs are disaggregated by upstream service.

Any other power costs that are not electricity or associated costs such as carbon reduction commitment charge should be allocated directly to the correct service cost centre in SAP, in accordance to RAG 3.11.

Methods and cost drivers used to calculate allocations between price control units

The following tables provide details on how the costs are allocated across price controls:

Table 1 – Wholesale/retail allocations

Activity	Company	2018/2019	2018/2019	2017/2018
Wholesale/Retail		Cost Driver	Why considered appropriate	Cost Driver
Customer Services - Billing	Loop	Wholly in retail	Per Ofwat RAG 2.07	Wholly in retail
Customer Services - Payment handling	Loop	Wholly in retail	Per Ofwat RAG 2.07	Wholly in retail
Customer Services - Charitable trust donations	YWSL	Wholly in retail	Per Ofwat RAG 2.07	Wholly in retail
Customer Services - Vulnerable customer schemes	Loop	Wholly in retail	Per Ofwat RAG 2.07	Wholly in retail
Customer Services Non-network customer enquiries and complaints	Loop / YW	Wholly in retail	Per Ofwat RAG 2.07	Wholly in retail
Customer Services - Network customer enquiries and complaints	YW	Wholly in retail	Per Ofwat RAG 2.07	Wholly in retail
Customer Services - Investigatory visits/first visit to customer	YW	Where the cause of investigation is not a network issue it is charged to retail. Where the cause of the investigation is a network issue it is charged to wholesale	Per Ofwat RAG 2.07	Where the cause of investigation is not a network issue it is charged to retail. Where the cause of the investigation is a network issue it is charged to wholesale.
Customer Services Other customer services	YW	Wholly in retail	Per Ofwat RAG 2.07	Wholly in retail
Debt management	Loop	Wholly in retail	Per Ofwat RAG 2.07	Wholly in retail
Doubtful debts	YW	Wholly in retail	Per Ofwat RAG 2.07	Wholly in retail
Meter reading	YW	Wholly in retail	Per Ofwat RAG 2.07	Wholly in retail

Table 1 – Wholesale/retail allocations (continued)

Activity	Company	2018/2019	2018/2019	2017/2018
Wholesale/Retail		Cost Driver	Why considered appropriate	Cost Driver
Services to developers	YW	Providing developer information and administration for new connections in retail, all other services within wholesale	Per Ofwat RAG 2.07	Providing information and administration for new connections in retail, all other services within wholesale
Disconnections and reconnections	YW	Administration and decision retail, physical activity is within wholesale	Per Ofwat RAG 2.07	Administration and decision retail, physical activity is within wholesale.
Demand side water initiatives	YW	All expenditure is retail except where expenditure is to meet wholesale outcomes	Per Ofwat RAG 2.07	All expenditure is retail except where expenditure is to meet wholesale outcomes
Customer side leaks	YW	All expenditure and income is retail except where expenditure is to meet wholesale outcomes	Per Ofwat RAG 2.07	All expenditure and income is retail except where expenditure is to meet wholesale outcomes
Other operating expenditure (OOE)	YW	Other direct costs which are retail in nature are allocated direct to retail. (i.e. those not covered under the other headings)	Per Ofwat RAG 2.07	Other direct costs which are retail in nature are allocated direct to retail. (i.e. those not covered under the other headings)
OOE - General and Support - IT costs	YW	Split based on headcount - proxy to number of computers	Per Ofwat RAG 2.07 allows the choice of an appropriate cost driver	Split based on headcount - proxy to number of computers
OOE - General and Support - Finance, HR, payroll, general management	YW	HR on headcount, everything else FTEs	HR on headcount, everything else FTEs Timesheets are not available so Ofwats second preference has been used	HR on headcount, everything else FTEs
OOE - Executive Directors remuneration	YW	FTEs	Timesheets are not available so Ofwats second preference has been used	FTEs

Table 1 – Wholesale/retail allocations (continued)

Activity	Company	2018/2019	2018/2019	2017/2018
Wholesale/Retail		Cost Driver	Why considered appropriate	Cost Driver
OOE - Non-Executive Director's remuneration	YW	FTEs	Timesheets are not available so Ofwats second preference has been used	FTEs
OOE - General and support - Facilities, building / grounds maintenance	YW	FTE (Inc. office based contractors) & grounds maintenance is directly allocated to the associated site	Per Ofwat RAG 2.07	FTE (Inc. office based contractors) & grounds maintenance is directly allocated to the associated site
OOE - General and support - insurance	YW	FTEs for staff related insurance, GMA values for asset insurance	Per Ofwat RAG 2.07	FTEs for staff related insurance, GMA values for asset insurance
OOE - Other general and support costs	YW	FTEs	Timesheets are not available so Ofwats second preference has been used	FTEs
OOE - Regulation Licence costs	YW	One ninth of Regulation staff and license costs are allocated to Retail and the remainder to Wholesale. The direct costs are used to proportion amongst upstream services	Per Ofwat RAG 2.07	One ninth of Regulation staff and license costs are allocated to Retail and the remainder to Wholesale
OOE - Local Authority Rates	YW	Rateable Asset Value	Per Ofwat RAG 2.07	Rateable Asset Value
"Third party services, e.g. rechargeable works"	YW	All Wholesale	Per Ofwat RAG 2.07	All Wholesale
Depreciation	YW	Assets allocated per principle use, partly in retail	Per Ofwat RAG 2.07	Assets allocated per principle use, partly in retail

Table 2 – Retail household / non-household allocations

Activity	Company	2017/2018	2017/2018	2016/2017
Retail household/ non-household		Cost Driver	Why considered appropriate	Cost Driver
Customer Services - Billing	Loop	Number of bills	Per Ofwat RAG 2.07	Number of bills
Customer Services - Payment handling	Loop	Number of payments	Per Ofwat RAG 2.07	Number of payments
Customer Services - Charitable trust donations	YWSL	N/A	N/A	N/A
Customer Services - Vulnerable customer schemes	Loop	100% household	Per Ofwat RAG 2.07	100% household
Customer Services - Non-network customer enquiries and complaints	YW / Loop	Volume of contacts	Timesheets are not available so Ofwats second preference has been used	Volume of contacts
Customer Services - Network customer enquiries and complaints	YW / Loop	Volume of contacts	Timesheets are not available so Ofwats second preference has been used	Volume of contacts
Customer Services - Investigatory visits/ first visit to customer	YW	Volume of visits	Timesheets are not available so Ofwats second preference has been used	Volume of visits
Customer Services Other customer services	YW / Loop	Customer numbers	Timesheets are not available so Ofwats second preference has been used	Customer numbers
Debt management	YW / Loop	Debt outstanding for more than 30 days	Per Ofwat RAG 2.07	Debt outstanding for more than 30 days
Doubtful debts	YW	Direct allocation	Per Ofwat RAG 2.07	Direct allocation
Meter reading	YW	Number of meter reads	Timesheets are not available so Ofwats second preference has been used	Number of meter reads
Services to developers	YW	100% non-household	Per Ofwat RAG 2.07	100% non-household

Table 2 – Retail household/non-household allocations (continued)

Activity	Company	2017/2018	2017/2018	2016/2017
Retail household/ non-household		Cost Driver	Why considered appropriate	Cost Driver
OOE - Disconnections and reconnections	YW / Loop	100% non-household	Per Ofwat RAG 2.07	100% non-household
OOE - Demand side water efficiency initiatives	YW	Direct allocation	Per Ofwat RAG 2.07	Direct allocation
OOE - Customer side leaks	YW	Direct allocation	Per Ofwat RAG 2.07	Direct allocation
OOE - Other direct costs	YW / Loop	Appropriate cost driver (based on nature of cost)	Per Ofwat RAG 2.07	Appropriate cost driver (based on nature of cost)
OOE - General and Support - IT	YW	Headcount used to allocate to retail activity then activity cost driver used	Ofwat RAG 2.05 allows the choice of an appropriate cost driver	Headcount used to allocate to retail activity then activity cost driver used
OOE - General and Support - IT	Loop	Customer numbers	Per Ofwat RAG 2.07	Customer numbers
OOE - General and Support - motor vehicles	YW / Loop	N/A	N/A	N/A
General and Support, Finance, HR etc.	YW	FTEs used to allocate to retail activity then activity cost driver used	Timesheets are not available so Ofwats second preference has been used	FTEs used to allocate to retail activity then activity cost driver used
General and Support, Finance, HR etc.	Loop	Customer numbers	Timesheets are not available so Ofwats second preference has been used	Customer numbers
General and Support - Executive Director's remuneration	YW	FTEs used to allocate to within retail activity	Timesheets are not available so Ofwats second preference has been used	FTEs used to allocate to within retail activity
General and Support - Non-Executive Director's remuneration	YW	FTEs used to allocate to retail activity then activity cost driver used	Timesheets are not available so management judgement has been applied	FTEs used to allocate to retail activity then activity cost driver used

Table 2 – Retail household/non-household allocations (continued)

Activity	Company	2017/2018	2017/2018	2016/2017
Retail household/ non-household		Cost Driver	Why considered appropriate	Cost Driver
General and Support - Facilities	YW	FTEs used to allocate to retail activity then activity cost driver used	Timesheets are not available so Ofwats second preference has been used	FTEs used to allocate to retail activity then activity cost driver used
General and Support - Facilities	Loop	Customer numbers	Timesheets are not available so Ofwats second preference has been used	Customer numbers
General and Support - Insurance	YW / Loop	FTEs used to allocate to retail activity then activity customer number cost driver used	Per Ofwat RAG 2.07	FTEs used to allocate to retail activity then activity customer number cost driver used
General and Support - Other	YW	FTEs used to allocate to retail activity then activity cost driver used	Timesheets are not available so management judgement has been applied	FTEs used to allocate to retail activity then activity cost driver used
General and Support - Other	Loop	Customer numbers	Per Ofwat RAG 2.07	Customer numbers
Regulation and licence fee	YW	Customer numbers	Per Ofwat RAG 2.07	Customer numbers
Local Authority Rates	YW / Loop	FTEs used to allocate to retail activity then customer numbers activity cost driver used	Ofwats second preference has been used	"FTEs used to allocate to retail activity then customer numbers activity cost driver used"
Third party services	YW	Direct allocation	Per Ofwat RAG 2.07	Direct allocation
Depreciation	YW	Assets allocated per principle use, partly in retail	Per Ofwat RAG 2.07	Assets allocated per principle use, partly in retail.

Table 3 – Wholesale Water cost allocations

Expenditure line	Method of allocation	Why considered appropriate	How satisfied
Power	Optima system collects costs at meter level and this costed directly to the activity where possible. Where site meters supply more than one service the account is split based upon estimated power usage of equipment on site	When metered data is available it is used, if it is not available management estimate is applied per RAG 4.08	Management estimates are reviewed by the finance team with operational colleagues
Income treated as negative expenditure	Allocated to main service, sub split to individual service using the same allocations as power above	No sub metering at large sites so the only way that this is possible	Management estimates are reviewed by finance business partners with operational colleagues
Service charges - Abstraction	Directly allocated	Directly allocated	Directly allocated
Service charges - Other	Directly allocated	Directly allocated	Directly allocated
Service charges - Discharge	Directly allocated	Directly allocated	Directly allocated
Bulk Supply	Directly allocated	Directly allocated	Directly allocated - bulk supply solely related to raw water
Other operating expenditure - Employment costs-based on Gross (i.e. prior to capital recharges)	These costs are allocated based on a management assessment. For overhead costs these are allocated based on number of FTEs. E.g. pension deficit	All employment costs charged to capital are recorded using timesheets. For remaining operating costs, management assessments are based, where possible, on operational data. Where this is not possible estimates have been made	Finance business partners are trained in accounting separation guidelines and meet with all operational budget managers. A peer review is also undertaken
Other operating expenditure - Hired and contracted services	These costs are allocated direct to service through our procurement system (SRM) and work management system (WMS). For elements which cross price controls, assessment are done to allocate these costs based on an appropriate driver	Directly allocated	A review is under-taken monthly and at the end of the year to ensure all costs have been allocated correctly
Other operating expenditure - Other direct costs - Telephone	Landlines are directly allocated. Mobile phones are allocated in the same way as employment costs	Directly allocated, where possible, and the rest in line with cost of employment	In line with employment allocation process

Table 3 – Wholesale Water cost allocations (continued)

Expenditure line	Method of allocation	Why considered appropriate	How satisfied
Other operating expenditure - Other direct costs - Insurance	Insurance payments are allocated directly to service and premiums are allocated using an appropriate cost driver based on the type of insurance	Directly allocated where possible, and the balance is based on appropriate cost driver	Insurance database categorises insurance claims and the allocations for the premium are based on the type of cover
Other operating expenditure - Other direct costs - Leases / rents	Operational leases and rents are allocated directly to service	Directly allocated	Monthly costs review to ensure directly allocated costs are correct
Other operating expenditure - Other direct costs - Contract cars	Allocated in the same way as employment costs	Directly allocated, where possible and the rest in line with cost of employment	In line with employment allocation process
Other operating expenditure - Other direct costs - Professional subscriptions	Directly allocated	Directly allocated	Directly allocated
Other operating expenditure - Other direct costs - GSS & Ex gratia	Directly allocated	Directly allocated	Monthly Guarantee Standards Scheme & exgratia reviewed to ensure directly allocated costs are correct
General and Support - HR	Allocated using headcount	Each colleague drives an HR cost even if part time	Proxy to how HR costs are driven
General and Support - IT	Headcount (Inc. office based contractors and 50% of non office as they share IT equipment)	Each colleague has a PC or hand-held device even if part time	Proxy for number of PCs and hand-held devices
General and Support - Management services and finance	FTE (Inc Contractors)	Based on Ofwat guidelines	Complies with guidelines
General and Support - Facilities	FTE (Inc office based contractors)	Based on Ofwat guidelines	Complies with guidelines
General and Support - Other	FTE	Based on Ofwat guidelines	Complies with guidelines
Scientific services	Allocated on costs of sampling	Costs are driven by complexity of sampling, for which cost is a proxy	Monitor sampling for DWI purposes
Other business activities (Licence fee)	One ninth of Regulation staff and license costs are allocated to Retail, with the remainder equally allocated to Wholesale services. The direct costs are used to proportion amongst upstream services	All of this cost is regulation costs. The cost allocation used is per the Ofwat guidance	Complies with RAG 2.07

Table 3 – Wholesale Water cost allocations (continued)

Expenditure line	Method of allocation	Why considered appropriate	How satisfied
Other business activities (MOSL Fee, pre-market opening)	58% Wholesale and 42% Retail (the 58% Wholesale is split 27% to Water and 31% Waste)	Based on letter from Ofwat to CEO 4 April 2014	Complies with letter specific to MOSL costs
Local authority rates - Cumulo rates (water)	Use Gross Modern Equivalent Asset values (GMEA) to allocate costs (Rateable assets only)	Based on value of assets assigned to the business unit which are reported in supplementary fixed assets tables	Complies with guidelines
Exceptional items	Directly allocated	Analysis of costs carried out	Complies with guidelines

Table 4 – Wholesale waste water cost allocations

Expenditure line	How costs are allocated	Why considered appropriate	How satisfied
Power	Optima system collects costs at meter level and this costed directly to the activity where possible. Where site meters supply more than one service the account is split based upon estimated power usage of equipment on site	When metered data is available it is used, if it is not available management estimate is applied per RAG 4.08	Management estimates are reviewed by finance business partners with operational colleagues
Income treated as negative expenditure	Allocated to main service, sub split to individual service using the same allocations as power above	No sub metering at large sites so the only way that this is possible	Management estimates are reviewed by finance business partners with operational colleagues
Service charges - Abstraction	Directly allocated	Directly allocated	Directly allocated
Service charges - Other	Directly allocated	Directly allocated	Directly allocated
Service charges - Discharge	Directly allocated	Directly allocated	Directly allocated
Bulk Supply	Directly allocated	Directly allocated	Directly allocated
Other operating expenditure - Employment costs based on Gross (i.e. prior to capital recharges)	These costs are allocated based on a management assessment. For overhead costs these are allocated based on number of FTEs. E.g. pension deficit	All employment costs charged to capital are booked based on timesheets. For remaining operating costs, management assessments are based, where possible, on operational data. Where this is not possible estimates have been made	Finance business partners are trained in accounting separation guidelines and meet with all operational budget managers. A peer review is also undertaken
Other operating expenditure - Hired and contracted services	These costs are allocated direct to service through our procurement system (SRM) and work management system (WMS). For elements which cross price controls assessment are done to allocate these costs based on an appropriate driver	Directly allocated	A review is undertaken monthly and at the end of the year to ensure all costs have been allocated correctly
Other operating expenditure - Other direct costs - Telephone	Mainly via data processing under non-operational overheads via assessment based on headcount	Directly allocated, where possible, and the rest in line with cost of employment	In line with employment allocation process

Table 4 – Wholesale waste water cost allocations (continued)

Expenditure line	How costs are allocated	Why considered appropriate	How satisfied
Other operating expenditure - Other direct costs - Insurance	Insurance payments are allocated directly to service, and premiums are allocated using an appropriate cost driver based on the type of insurance	Directly allocated where possible, and the balance is based on appropriate cost driver	Insurance database categorises insurance claims and the allocations for the premium are based on the type of cover
Other operating expenditure - Other direct costs - Leases/rents	Operational leases and rents are allocated directly to service	Directly allocated	Monthly costs review to ensure directly allocated costs are correct
Other operating expenditure - Other direct costs - Contract cars	Allocated in the same way as employment costs	Directly allocated, where possible and the rest in line with cost of employment	In line with employment allocation process
Other operating expenditure - Other direct costs - Professional subscriptions	Directly allocated	Directly allocated	Directly allocated
Other operating expenditure - Other direct costs - GSS & exgratia	Directly allocated	Directly allocated	Monthly Guarantee Standards Scheme & exgratia review to ensure directly allocated costs are correct
General and Support - HR	Allocated using headcount	Each colleague drives an HR cost, even if colleague is part time	Proxy to how HR costs are driven
General and Support - IT	Headcount (Inc. office based contractors and 50% of non office as they share IT equipment)	Each colleague has a PC or hand-held device, even if part time	Proxy for number of PCs and hand-held devices
General and support - Management services and finance	FTE (Inc. Contractors)	Based on Ofwat guidelines	Complies with guidelines
General and Support - Facilities	FTE (Inc. office based contractors)	Based on Ofwat guidelines	Complies with guidelines
General and support - Other	FTE	Based on Ofwat guidelines	Complies with guidelines
Scientific services	Allocated on costs of sampling	Costs are driven by complexity of sampling, for which cost is a proxy	Monitor sampling for DWI purposes

Table 4 – Wholesale waste water cost allocations (continued)

Expenditure line	How costs are allocated	Why considered appropriate	How satisfied
Other business activities (Licence fee)	One ninth of Regulation staff and license costs are allocated to Retail, with the remainder equally allocated to Wholesale services. The direct costs are used to proportion amongst upstream services	All of this cost is regulation costs. The cost allocation used is per the Ofwat guidance	Complies with RAG 2.07
Other business activities (MOSL Fee, pre market opening)	58% Wholesale and 42% Retail (the 58% Wholesale is split 27% to Water and 31% Waste)	Based on letter from Ofwat to CEO 4 April 2014	Complies with letter specific to MOSL costs
Local authority rates - Cumulo rates (Waste water)	Use Gross Modern Equivalent Asset values (GMEA) to allocate costs (Rateable assets only)	Based on value of assets assigned to the business unit which are reported in supplementary fixed assets tables	Complies with guidelines
Exceptional items	Directly allocated	Analysis of costs carried out	Complies with guidelines
Customer services - Billing	Where separately costed teams work solely on billing activity they are coded directly to billing. Where teams work for a proportion of their time on billing an appropriate cost driver is used. Where teams work solely on household or non-household they are allocated accordingly	Where costs are separately identified on SAP these are charged direct. For costs which are allocated, e.g. postage, an appropriate cost driver is used, e.g. number of bills issued as a proportion of total items of mail dispatched	Cost allocation methods are reviewed with a finance business partner and an operational colleague to ensure appropriate
Customer services - Payment handling	Payment commissions and the cost of the Payments team are held separately in SAP. Other costs allocated to payment handling are small and based on an appropriate cost driver	The majority of costs are separately identifiable	The majority of costs are separately identifiable
Customer services - Charitable trust donations	No costs	N/A	N/A
Customer services - Vulnerable customer schemes	Costs are allocated directly	Direct cost allocation	Cost allocation methods are reviewed with a finance business partner and an operational colleague to ensure appropriate

Table 4 – Wholesale waste water cost allocations (continued)

Expenditure line	How costs are allocated	Why considered appropriate	How satisfied
Customer services - Non-network enquiries and complaints	Contact centre costs are allocated between network and non-network using the number of contacts as a cost driver. The number of contacts agrees to numbers reported for the Company Compliance Certificate and SIM. Other teams costs are allocated based on management estimate	Costs are apportioned based on the number of calls which is what drives the costs	The number of contacts used to apportion costs are assured through existing processes
Customer services - Network enquiries and complaints	Contact centre costs are allocated between network and non-network using the number of contacts as a cost driver. The number of contacts agrees to numbers reported for the Company Compliance Certificate and SIM. Other teams costs are allocated based on management estimate	Costs are apportioned based on the number of calls which is what drives the costs	The number of contacts used to apportion costs are assured through existing processes

Table 5 – Retail cost allocations

Expenditure line	How costs are allocated	Why considered appropriate	How satisfied
Customer services - First time investigatory visits - Retail	An analysis is prepared of customer visits which are not due to a network failure	This is compliant with Ofwat's guidance that first time investigatory visits that are not due to a network failure are classed as retail activities	Cost allocation methods are reviewed with a finance business partner and an operational colleague to ensure appropriate.
Customer services - Other customer services	No costs	N/A	N/A
Debt management	Most is done by separate household and non-household teams who's costs are allocated directly. Some other teams are allocated to this activity by management estimate, but the costs are smaller in value.	The majority of costs are separately identifiable	The majority of costs are separately identifiable
Doubtful debts	Costs are allocated directly	Costs are allocated directly	Costs are allocated directly
Meter reading	Costs are allocated directly	Costs are allocated directly	Costs are allocated directly
Services to developers	Costs are allocated directly	Costs are allocated directly	Costs are allocated directly
General and support - IT	Loop Customer Management Limited (LCML) costs are allocated directly. For YWSL costs are allocated based on headcount.	Assumed each person employed has a PC, Laptop or hand-held	Headcount from Payroll by section
General and support - HR	LCML costs are allocated directly. For YWSL costs are allocated based on headcount	Assumed each person employed has a call upon HR services	FTE from Payroll by section
General and support - Facilities	LCML costs are allocated directly. For YWSL costs are allocated based on floor space and FTE	Floor space alone is not valid as some staff carry out both wholesale and retail activities	Done on a facilities site specific basis
General and support - Other	LCML costs are allocated directly. For YWSL costs are one ninth of regulation staff and license costs	YWSL is regulation costs. The cost allocation used is per the Ofwat guidance.	Complies with guidelines

Table 6 – Non-appointed cost allocations

Expenditure line	How costs are allocated	Why considered appropriate
Revenue	Non-Water/wastewater services e.g. tankered waste third party use of appointed assets rechargeable work where the appointee is not a statutory supplier	RAG 4.08 Appendix 1 & Ofwat email following CEPA review
Operating costs	Associated operating costs with revenue stated above, fully including with depreciation when appropriate	RAG 4.08 & Ofwat email following CEPA review
UK Corporation tax	Yorkshire Water Services Limited has no corporation tax liability for the period. As such, there are no corporation tax costs to allocate to the non-appointed business	Corporation tax is chargeable on a company basis. Yorkshire Water Services Limited has no corporation tax costs to allocate for the period

Table 7 – Sewage collection split by function, as recorded in Yorkshire Water mapping system

Function	Length, Kilometres	Split by function, %
Foul	11,972	39%
Surface Water	13,387	43%
Highways	5,429	18%
Total	30,788	100%

Changes to methodology, reasons and quantification

A thorough review of operating cost allocations and SAP processes has been undertaken to ensure compliance with Regulatory Accounting Standards, with some of the enhancements made moving overhead costs to more accurate categorisations compared to previous years. Whilst the majority of this change started in last reporting year (2017/18), these changes have continued into this reporting period. This should allow greater comparability to other water and sewerage companies.

The main changes have involved a bottom up appraisal of staff and contractor time, which forms the basis on which overheads are allocated to price controls and upstream services. In previous years the allocations were based predominantly on internal employees and didn't take account the impact of outsourcing or external contractual arrangements. The implementation of outsourcing and the use of contractors differs significantly between price controls and between operational management areas in Yorkshire Water. For example, the logistics function for tankering sludge has historically been designed as a directly (internally) resourced function, whilst below ground repair and maintenance functions have long been outsourced functions.

As outsourced functions have been encouraged to move onto Yorkshire Water IT platforms, they have become material users of systems. Many contracted staff have been encouraged to work on Yorkshire Water premises given the cost efficiencies obtained through co-location. Given the causality principle set out in RAG 2.07, it is fairer and more appropriate to allocate some IT and facilities costs according to contractor consumption. Most outsourced and contracted resources work within water networks plus, and proportionally, most directly employed resources work within sludge. As a consequence of the improved recharges, proportionally slightly more overhead has been allocated to water, and vice versa, and less to waste networks and sludge.

By using a new Business Intelligence (BI) tool using data recorded from SAP, a new and more detailed view of staff time has been obtained.

Table 8 shows the movement in percentages from the last reporting period, which show marginal movement as the majority of the changes had been made in 2017/2018.

Table 8 – Management & General (M&G) percentage cost split allocations across the price controls as below:

FTE % allocations	Water resources	Water network plus	Network plus sewage collection	Network plus sewage treatment	Sludge	Retail HH	Retail NHH	Total
Total overhead 2017/2018	4%	40%	14%	26%	10%	5%	1%	100%
Total overhead 2018/2019	2%	39%	17%	23%	11%	6%	2%	100%
Management services & finance 2017/2018	1%	52%	21%	14%	7%	4%	1%	100%
Management services & finance 2018/2019	1%	56%	19%	13%	5%	5%	1%	100%
Data processing 2017/2018	2%	50%	19%	16%	8%	4%	1%	100%
Data processing 2018/2019	1%	54%	18%	15%	6%	5%	1%	100%
Facilities 2017/2018	2%	46%	17%	19%	9%	5%	2%	100%
Facilities 2018/2019	2%	50%	14%	18%	8%	7%	1%	100%

The above table shows how the Management and General costs have been allocated using internal FTE and contractors (where they use the overhead services). For most management and general allocations internal YW FTE has been used. However, we have incorporated total contractors FTE's for management and finance as the costs in year benefit the whole contract. In terms of data processing costs which are mainly information technology costs, only the numbers of contractors using these services have been included and similarly where contractors use Yorkshire Water facilities they have been within the FTE. These allocations were introduced in 2017/2018 have been improved from previous years and ensure that each price control receives a fair share of the Management & General costs. Following on from the sale of some of the non regulated businesses and ongoing key projects in the support function the general and support expenditure has increased from 2017/2018 by £12.4m, there is a focus in the coming financial year to review and reduced this across all support functions. The increase in 2018/2019 amongst price control is highlighted on the next page in table 9:

Table 9

Variance	Water resources	Water network plus	Network plus sewage collection	Network plus sewage treatment	Sludge	Retail HH	Retail NHH	Total
General & support variance	£0.8m	£6.6m	£0.4m	£1.6m	£0.8m	£1.8m	£0.5m	£12.4m

In addition, inter-price control charges have been introduced in reporting period 2017/2018 for the consumption of water by waste water network plus and sludge, and offsetting this a charge for the disposal of water sludges produced through water treatment. Ofwat further reminded the industry in RAG 2.07 paragraph 2.15, that these recharges should be made. These changes have continued in 2018/2019 and are aligned to previous reporting period approach, these are listed and quantified in the table below:

Table 10

	Water Networks Plus	Waste Networks Plus	Retail Household	Retail Non-Household
Water usage	-£1m	£1m	£0.0m	£0.0m
Waste water disposal	£5.8m	-£5.8m	£0.0m	£0.0m

Additional enhancements to the regulatory accounts continued in 2018/2019 which include consistent reporting of tankered trade effluent for two customers resulting in £1.8m reduction in waste water wholesale operating costs.

We have used a review of the MEAV for all the rateable assets for each upstream service. Historically the allocation method used MEAV of all assets regardless of whether the assets were rateable or not, and given the RAG 2.07 principle of causality we have only used rateable assets.

In table 2E, all capital income is now included under 'Capitalised and amortised in accounts'. This reflects a change in the presentation of capital income in the statutory accounts in line with FRS102, whereby all capital income is now transferred to Deferred Income.

Power

Electricity allocations amongst price controls and upstream services have been a focus for this year's annual performance report, with involvement of operational managers and energy experts across the business reviewing each site by assets and electricity rating of the assets. This has further refined the process to ensure that in particular the co-located sites electricity costs are allocated much more accurately. A summary in table 11 shows which costs are directly costed and which are allocated. In summary electricity costs are allocated to services in three different ways:

- Sites that have been determined to be more than 95% related to a single service have been directly posted to a cost centre for that process, with the remaining percentages for those sites established to be immaterial and not cost beneficial to allocate further (per accordance with RAG 2).
- Sites with generation from sludge processes are complex, so are allocated to services on a monthly basis as part of the financial month end process. For these sites, all generation is deemed to be sludge related and overall site consumption, not purchased units, are allocated by percentage before the generation is deducted.
- Other sites relating to more than one service are coded to Whole Site Costs cost centres. These costs are then allocated by SAP cost assessment process.

Direct and Indirect Costs

Direct costs are costs which relate directly to that activity and are costed in SAP directly; indirect costs are costs that are allocated on an assessment basis. Table 11 below shows the proportions which are direct and indirect for total other operating costs showing a majority of these costs directly allocated and the remainder allocated, both water and waste water show that they are consistent.

Planned Improvements for future years

Assurance process using comparatives and regular review with operational managers would be a focus for the coming reporting year. It is anticipated that we don't do this as a one-off exercise and the aspiration is that we review certain regulatory accounts tables on a monthly basis with operational teams. Whilst there is an desire to have minimal manual adjustments, this year's APR has meant further manual adjustments, but this ensures that the numbers are much more accurate and aligned to industry.

Our long-term ambition is to move operational budgets to the same Price Control basis to remove disaggregation of costs, and this has been incorporated into the refresh of our corporate SAP system.

Yorkshire Water has now gone live with the new corporate system SAP 4 HANA. The new primary SAP hierarchy for budgets and costs will be in accordance with current boundary guidelines for each price controls, with operational management controlling RAG based budgets, rather than consolidating or reallocating management accounts into price controls at year end. This builds on our current operational management accounts which are currently split into areas that closely match the regulatory price controls and upstream services. This helps to minimise the variances between management and regulatory accounts. The areas for future management accounts reporting are:

- Water Distribution
- Water Production
- Waste Water customer field services
- Waste Water process and pumping
- Bioresources
- Household retail

Table 11

	Wholesale			
	Water		Waste Water	
	Direct	Allocated	Direct	Allocated
Power	62%	38%	78%	22%
Other operating costs	59%	41%	62%	38%

Wholestream Upstream services

The disaggregation of operating costs into Price Controls (within tables 2B) follows the same process as the disaggregation into upstream services (within tables 4D-F). The allocation methods and processes described in this Accounting Separation Methodology statement apply to both upstream services and price controls. A description of the basis of upstream costs as been included in the commentary below. Capital cost allocations are also the same for capital expenditure. All capital projects are coded directly to the relevant upstream service by using Investment categories on SAP for each project, which are then amalgamated into Price Control.

Table showing Water upstream cost methodology & assumptions

Price control	Upstream service	YW methodology & assumptions	Volumes/ Drivers
	Abstraction licences	Abstraction licence costs payable to the Environment Agency are held on a separate general ledger code and on specific cost centres within the accounting system SAP.	Licensed volume in MI
Water resources	Raw water abstraction	The Yorkshire Water (YW) costing structure is set up in such a way that the cost centres within the accounting system SAP reflect the definition, which includes any pumping associated between two reservoirs. It is assumed that impounding reservoirs (including compensating reservoirs) are under raw water abstraction. All YW impounding reservoirs have abstraction licences either individually, or as a group e.g. those in the Washburn Valley. Yorkshire Water has only one bulk supply import that is allocated to water resources.	Volume abstracted in MI
	Raw water transport	The YW costing structure is set up in such a way that the cost centres within the SAP system reflect the definition of raw water transport.	Volume transported in MI
Water network plus	Raw water storage	The YW costing structure is set up in such a way that the cost centres within the SAP system reflect the definition of raw water storage.	Average volume in MI
	Water treatment	Not all costs are posted to individual treatments works, for example salary costs are posted at service level. Provision of unit costing for individual works or at large / small works type is therefore not currently available.	Distribution input (potable) volume in MI.

Table showing water upstream cost methodology & assumptions (continued)

Price control	Upstream service	YW methodology & assumptions	Volumes/ Drivers
<p>Water networks plus (continued)</p>	<p>Treated Water Distribution</p>	<p>The YW costing structure is set up on a catchment basis, each area contains both above and below ground assets with no split between trunk treated water transport and local treated water distribution. Some larger assets, e.g. Grid Pumps, do have their own cost centre. In order to complete the upstream services table, the above and below ground assets within each TWT were assigned to either trunk or local with the following assumptions being made.</p> <p>Above Ground Assets</p> <p>The following types of assets were split between trunk and local:</p> <ul style="list-style-type: none"> Water Pumping Stations (WPS) Water Towers (WTR) Service Reservoirs (SRE) Critical Supply Reservoirs (CRE) <p>The treated water storage assets (towers, services reservoirs and critical supply reservoirs) could be either trunk or local, but only a small number are deemed by operational colleagues to be local. Therefore, all treated water storage costs have been dealt with as trunk mains costs.</p> <p>Water pumping stations could be deemed to be either trunk or local so an exercise has been carried out to determine of the operational Water Pumping Stations into which category they belong. Power costs by metered supply have been assigned based on this data. Other costs such as maintenance have been split pro rata.</p> <p>There is no specific field in the asset database to identify whether treated water distribution assets relate to trunk or local mains. However, current cost depreciation is only found on above ground assets within this business unit, and the CCD value has been allocated in a consistent manner to operating costs.</p> <p>Below Ground Assets</p> <p>Below ground assets within the YW Asset Inventory System have a flag attached to them, indicating whether they are 'Main Treated' or 'Distribution Management Area'. Functional locations within SAP direct all repair and maintenance activity to the relevant network cost centre, apart from proactive leakage repairs which are settled to codes that separately identify them.</p> <p>An analysis of borehole pumping costs using the formulas within RAG 2.07 has been performed to calculate the proportion of costs that relate to the separate upstream services for water resources and water networks plus upstream services.</p>	<p>Distribution input (potable) volume in MI.</p>

Table showing water upstream cost methodology & assumptions (continued)

Price control	Upstream service	YW methodology & assumptions	Volumes/ Drivers
Network plus sewage collection	Foul	"YW splits its sewage collection assets into the three upstream services, foul, surface water and combined. However, from a costing perspective, sewage collection costs are held on cost centres at drainage area zone (DAZ) level for both above and below ground assets with no split between foul, surface, highways or combined. In order to do the apportionment, an analysis of sewer lengths in each of the three 'network plus' categories have been undertaken from our Asset Inventory (AI) system has been done and remains consistent with prior year."	Volume collected in MI.
	Surface water drainage		Volume collected in MI.
	Highway drainage	YW's operational (non-terminal) stations are categorised as foul, surface or combined. No pumping stations have been identified specifically under the highways drainage category. Power costs are allocated direct to appropriate service (i.e. foul, surface) with the costs attributed to combine being allocated as described.	Volume collected in MI.
		Repair and maintenance work (cyclical or reactive) on infrastructure assets is carried out by contractors on jobs raised via SAP which is coded to the drainage area zone. Costs are collected at drainage area zone level only.	
Network plus sewage treatment	Sewage treatment & disposal	A significant proportion of costs are coded directly (e.g. maintenance work is coded directly to assets), with some costs such as salary costs posted at service level.	Biochemical oxygen demand (BOD) in tonnes.
	Imported liquor treatment	A small proportion of direct costs are allocated to this activity as most of the liquor is gravity returned to the front inlet of a sewage treatment works and therefore incurs very little cost. Salary costs are posted at service level based upon management assessment, and power costs are a split of whole site costs based on management assessment of power usage on liquor treatment. A change in 2018/19 has improved allocation here for overheads in particular regulations costs which are allocated in accordance to the RAGs by splitting to 1/9ths but instead of previous years of costs allocated equally to upstream services, they have been proportioned based on direct costs.	Biochemical oxygen demand (BOD) in tonnes.

Table showing water upstream cost methodology & assumptions (continued)

Price control	Upstream service	YW methodology & assumptions	Volumes/ Drivers
Sludge	Sludge transport	It is assumed that liquid sludge movements are included under transport. There is a separate and centralised tankering team using dedicated staff and vehicles coded directly to sludge transport. Sludge transport assets include vehicles used in the transport of sewage sludge from one site to another, and also equipment found at treatment facilities used in loading such vehicles, for example tanker loading pumps.	Volume transported (m ³)
	Sludge treatment	The YW costing structure is set up in such a way that the cost centres within the SAP system reflect the definition of sludge treatment. Salary costs are posted at service level based upon management assessment and power costs are a split of whole site costs based on management assessment of power usage.	Dried solid mass in tonnes of dried solids (ttds)
	Sludge disposal	The YW costing structure is set up in such a way that the cost centres within the SAP system reflect the definition of sludge disposal. Salary costs are posted at service level based upon management assessment. A focussed sludge disposal team means all disposal costs are allocated to one budget, and collating these costs is much easier than other upstream services.	Dried solid mass in tonnes of dried solids (ttds)

Derivation of quantities used to calculate the unit cost information

The majority of the quantities used in tables 4D and 4E are reported consistently with normal annual reporting and data contained and assured in other tables:

Water

- Water Resources – Abstractions licences: Licensed volume available from reservoirs, rivers and boreholes. Non-public water supply abstractions are subtracted from this volume to give the volume related to water resources for potable supply (Distribution Input) only.
- Water Resources – Raw water abstraction: volume abstracted from reservoirs, rivers and boreholes. Every abstraction source is metered, using electromagnetic flowmeters, and are connected to Yorkshire Water's Regional Telemetry System (RTS). Some licences have multiple flow meters. The data forms part of the licensed abstraction annual return to the Environment Agency and is assured separately.
- Networks Plus – Raw water transport: volumes transported between sources. The activities allocated to this service primarily including the development and maintenance of the physical raw water transport network. This includes pipelines and aqueducts.
- Networks Plus – Raw water storage: a review of this area in conjunction with external assurance has resulted in a change of reporting volumes in this area. The changes have been explained in detail in section 8 as part of the commentary for table 4D. In summary, the revised methodology to align with the RAGs shows a significant reduction in volumes and this has been reviewed for previous years. A summary of these changes is shown below:

	4D.25 Average volume stored (MI)	
	Old methodology	Revised methodology
2015/2016	90,053	3257.643
2016/2017	120,945	3250.426
2017/2018	119,057	3174.935
2018/2019	123,960	3358.318

- Networks Plus – Water Treatment and Water Distribution: Distribution Input volumes come from the corporate Water into Supply databases, which are assured as part of the APR process for reporting total leakage. For this reporting table the volume is converted to an annual volume by multiplication of 365 days.
- Population is the sum of our water and water and waste water customers. The information comes from our billing system and is assured annually.

Waste

- Volume collected foul – This is based upon multiple reports in the business, for example using household measured domestic reports and consumption per head, non-household consumption, trade effluent volume, and unmeasured analysis.
- Volume collected surface water and highway drainage - The drainage volumes collected are estimated from secondary sources such as the Generalised Land Use Survey (GLUD) and are therefore of low confidence. The estimates are based on the average impermeable area of households and non-households (m²/property) that are drained to sewers/drains, the number of properties physically connected and billed for drainage services, and the average rainfall (mm) across the Yorkshire region. The area drained, and the associated volume collected from highways, is based on an estimate of the proportion of the total impermeable area drained that is accounted for by this surface type.
- Biochemical Oxygen Demand (BOD) sewage. This calculates the sum of BOD from three elements; resident population, holiday population, trade effluent loads and additional loads from septic tanks and cesspools. A conversion factor of 60g/h/d BOD load is used to convert population figures to BOD and 2:1 ratio to convert COD load to BOD. Trade effluent is lower than last year, as is the reduction in revenues.
- Biological Oxygen Demand (BOD) sludge liquor.
- There are a number of assumptions that are required to calculate the figure which reduces the confidence in the figure reported. Knowing the tonnes dry solids (tds) produced at each works, the volume of liquors produced from typical %ds figures expected upstream at each process step was calculated. With the calculated volume, the total BOD load has been calculated using 'expected' BOD concentrations.
- Sludge volume transported - Transport records comprising liquid sludge movements have been utilised to calculate this line. The liquid sludge is measured at the works receiving sludge tanker loads.

Significant changes in cost, or movements in a cost type between upstream services, and significant movements in unit rates

Water

Overall operating costs for the water service increased year on year by £58.4m, c30%. In 2017/18 the operating expenditure for the Clean Water network as whole was £197.2m which increased to £255.6m for 2018/19. If we assume RPI inflation to be 3.06%, the net real increase would be c£52m. A summary of movements by upstream service is shown in the below table:

Clean Water	Units	DPs	Water Resources		Network Plus				Total
			Abstraction Licence	Raw Water Abstraction	Raw Water Transport	Raw Water Storage	Water Treatment	Treated Water Distribution	
Total Operating Expenses 2018/2019	£'m	3	5.161	23.979	10.446	2.012	55.229	158.8	255.627
Total Operating Expenses 2017/2018	£'m	3	4.994	21.131	9.814	1.368	45.046	114.841	197.194
Variances	£'m	3	0.167	2.848	0.632	0.644	10.183	43.959	58.433
Variance	%	3	3.34%	13.48%	6.44%	47.08%	22.61%	38.28%	29.63%

This increase has been caused by a variety of reasons:

- Extreme weather conditions
- General and Support expenses reallocation
- Focus on leakage reduction
- High Production levels

We experienced extremely cold weather towards the end of 2017/2018 (24th February 2018 through to 4th March 2018), this was then followed by exceptional dry weather conditions for a number of months. The impact of these weather episodes led to a significant number of leakages as the cold weather caused an increase in burst pipes, directly followed by the dry weather which caused dry soil to move and cause further pipe bursts. These conditions have caused significantly more costs (£25.47m) to be incurred in mitigation – 73% (£18.5m) of these costs have been allocated to treated water distribution as they were costs incurred by the increased pumping of water around our distribution network to maintain supply around the Yorkshire region to ensure customers needs were met.

There has been a focus on reducing leakage within treated water distribution and this has caused an increase in costs of £20m due to the recruitment of 185 new Leakage Inspectors and additional expenditure to help achieve performance targets for leakage and supply interruptions.

The water rates look to have risen by £3.6m in 2018/2019 in comparison to the previous year – however, we received a rates refund of £6.293m in 2017/2018 causing the figures to appear lower than they would've done in a standard year. Therefore, this is not a true reflection of the cost movement in a standard year.

Water Treatment has seen an increase in costs of £10m, 50% of this increase was in relation to the dry weather pumping and power costs incurred, due to escalated water production to meet demand. The remainder of the increase in expenditure is mainly for chemicals.

The General and Support expenses have increased by £7.4m for wholesale water and as explained earlier in the methodology this is due to the additional projects ongoing in the support functions, this is becoming a focus area in the coming area to understand how improvements can be made.

Pension costs are included (as prior year) within other operating costs, as Yorkshire Water accounting policies are in accordance with FRS102 these pension costs are included in the P & L.

Water Unit Costs

The unit prices across the clean water aspect have mainly been impacted due to the dry weather and focus on achieving enhanced performance commitments primarily on leakage impacting the water distribution. A summary of changes in unit price using volumetric data is explained below:

- Abstraction licence has seen a minimal change in unit prices has been experienced
- Raw Water Abstraction has seen a 11% increase in unit price which (after consideration for inflationary increases) has been associated with the exceptional dry summer, resulting in an increase in costs and volumes remaining consistent to previous reporting year
- Raw Water Transport has only seen marginal increases in unit prices
- Raw Water Storage has seen a change in reporting volumes as explained in the previous section of this methodology (under 'Derivation of quantities used to calculate the unit cost information') and in further detail in section 8 table 4D of the APR. The change has been following recommendation from external assurance and results in a substantial reduction in volume, resulting then in a significant increase in unit price. If you apply the same methodology of volumes to 2017/2018 reporting year we can see that the unit price is showing less significant change. The table below provides this summary:

	Raw Water Storage	
	Reported view	Revised volume view
2017/2018 Unit Cost (£/MI)	11.49	430.87
2018/2019 Unit Cost (£/MI)	599.11	599.11

- Despite the revised approach if we consider making the two years consistent in terms of volume the increase in unit price is reflective due to the increase in costs. This upturn in costs are predominately as a result of increased focus of maintenance for these asset types.
- Water Treatment unit prices have increased by 22%, this is as a result of increase in costs as the volumes are aligned to previous reporting period. The main increase in costs is due to the dry summer resulting in costly pumping costs and chemical costs above the normal operations of predictable year.
- Treated Water distribution unit price has also seen increase in terms of unit price which is due to costs are there is no material change in the volume year on year. The increase in costs are due to the dry summer as explained for water treatment and the exceptional costs experienced by this upstream service of £18.7m. Furthermore, the focus on leakage targets and enhanced performance commitment has resulted in additional staff costs for detection and contract partner costs for repair.

Waste Water

The Waste Water has seen an increase of total operating costs of £21m, this is a percentage increase of 12% compared to 2017/2018. (RPI inflation shows a net real increase of £15.5m). The total operating costs for Waste Water for 2018/2019 were £203.3m, having increased from £182.3m for 2017/2018. A summary table showing year on year movements by upstream service is below:

			Network+ Sewage Collection			Network + Sewage Treatment		Sludge			
Clean Water	Units	DPs	Foul	Surface Water Drainage	Highway Drainage	Sewage Treatment and Disposal	Imported Sludge Liquor Treatment	Sludge Transport	Sludge Treatment	Sludge Disposal	Total
Total Operating Expenses 2018/2019	£'m	3	27.255	25.746	13.479	99.527	1.080	6.775	17.210	12.179	203.253
Total Operating Expenses 2017/2018	£'m	3	19.602	19.558	10.486	84.66	2.197	6.392	27.484	11.879	182.258
Variances	£'m	3	7.653	6.188	2.993	14.867	-1.117	0.383	-10.274	0.300	20.995
Variance	%	3	39.04%	31.64%	28.54%	17.56%	-50.84%	5.99%	-37.38%	2.53%	11.52%

The year on year changes have been caused by a number of reasons:

- Lower flooding expenditure than 2017/2018
- General & Support expenses reallocation
- Backlog reduction to support enhanced performance commitment measures
- Tankering mitigation costs

The largest increase in costs are associated with hired and contracted services within sewage collection, this has totalled £9.6m and was caused by the increased concentration on reducing backlog, sewer flooding and aiming to meet performance targets. A price increase has also been experienced in the repair and maintenance contract costs, as well as increase in job volumes.

Furthermore, sewage collection for 2018/2019 has suffered an increase in other operating costs of which (c£2.4m) is associated with increased levels of fines for pollution incidents.

Sewage treatment and disposal has seen an overall increase of c£15m which is primarily due to an increase in hired and contracted services (£5.1m) which has been caused by the increased need for sewage tankering to mitigate pumping stations which has been due to a long lead time on parts and capital solutions. There has been an increase cost of hire equipment due to out of service equipment, along with an increase in costs for additional contractor resources for higher risk sites.

There has been an increase of £1.4m in wages and salaries for sewage treatment and this is due to the restructuring of what was the waste water services team and the creation of waste water process and pumping, which focuses on the above ground assets while the customer field services team focuses on the below ground waste water assets. This required an additional technical and projects team, and therefore, 11 additional employees. There has also been the implementation of Operational Field Manager roles within sewage treatment who focus on the above ground assets which has increased these costs. Historically, there has been team leaders and catchment managers with roles which encompassed both above and below ground assets, rather than focused roles on each which has now been implemented.

Sewage treatment has also seen an increase in material and consumables of £1.3m due to the need for more chemical dosing due to trader breaches of discharges above their consents, and these are required to maintain compliance at sewage treatment works.

The general and support expenses have increased by £2.9m over waste water, this is for similar reasons as the increase we have seen in wholesale water for this area due to ongoing projects by the support functions.

There has been a fall in costs of £9.6m for bio resources and this is due to a significant decrease in hired and contracted services within sludge treatment which accounts for 85% (£8.2m) of this variance. This is primarily due to an outage of one of our key assets during 2017/2018 and this led to high mitigation costs in the year. These issues improved in 2018/2019,

and we now replaced the asset for improved reliability. The downtime of this asset within 2017/2018 has improved the finances for 2018/2019 by £3.7m. A further reduction in transport gate fees have improved throughout this year and has led to a decrease in costs of £1.5m from the previous year.

Atypical expenditure in relation to the floods in December 2015 has fallen from £8m in 2017/2018, to £6.3m in 2018/2019, this fall in expenditure is reflected within the total operating expenditure for sludge treatment and sludge disposal.

Pension costs are included (as prior year) within other operating costs, as Yorkshire Water accounting policies are in accordance with FRS102 these pension costs are included in the P & L.

Waste Water Unit Costs

The changes in unit prices based on volume have fluctuated across Waste Water due to various reasons:

- Waste water sewerage collection changes are primarily due to additional work and the volumes (used to work out unit prices) remaining the same. This additional work has been to bring down the job baskets in this area with a view to ensure that the enhanced performance commitments can be delivered in AMP7. Furthermore, insource of this activity into the business from May 2019 resulted in settlement costs arising to close historic years settlement in reporting year 2018/2019
- The increase in unit price on sewage treatment and disposal has been due to a focus on compliance, which has resulted in expensive mitigation on site for sites that have been close to failing their consent limits
- Imported sludge liquor treatment has seen a reduction in totality, whilst we have seen an increase in direct costs at key sites which is explained in the table 40 commentary by site. However, the total reduction is due to indirect costs which is following the allocation of regulation costs. Last year the costs were split in 1/9th and then equally by upstream service. For this reporting period they are by 1/9th and then proportioned by direct costs. This is a more accurate allocation, particularly for upstream services which have lower direct costs
- Sludge transport unit prices are broadly aligned to previous reporting year
- The significant reduction in sludge treatment unit prices are due to majority of sludge treated utilising internal assets (as oppose to mitigation assets following the December 2015 floods) and improved reliability of assets. Furthermore, the new anaerobic digestion plant has further helped with reducing the unit price for this upstream service

- The reduction in sludge disposal costs is due to 2017/2018 experiencing the largest volume of sludge disposed to third parties due to assets out as a result of the December 2015 floods and outage of assets due to reliability issues. This reporting year has seen an improvement in reliability of assets and new assets commissioning resulting in more sludge process internally and disposal routes much cheaper than raw sludge unit prices paid to third parties.

Retail Household

The retail household expenditure has increased by c£4m from £55m in 2017/2018 up to £59m in 2018/2019. This is an increase of 7.12% year on year – after taking inflation into consideration, this would show an increase in expenses of c£2.2m.

There are a number of reasons for the increase in costs as follows:

- The impact of the Beast from the East weather event (as described previously) and the following leakage incidents leading to an increase in the number of customers contacting our call centre to discuss problems. Subsequently, this has caused an increase in customer service costs of £1m, bringing the total to £17m in 2018/2019.
- Doubtful Debt has increased by £1.9m from 2017/2018 and this is due to the Government's introduction of Universal Credit, to replace the previous benefits system. This has led to a fall in the number of customers who paid their water bills through the 'Water Direct' method (payment taken directly from their benefits from the Department of Work & Pensions). This has caused more customers to be unable to make their payments, and an increase in the doubtful debt.
- A further increase in costs has been seen on general and support costs for customer services, this is due to the ongoing implementation of the 'Drive to Digital' webchat facility, and the costs involved with this (leading to an increase of £1.2m in costs for network and non-network customer enquiries).
- Additional increases in expenditure for retail household are due to the number of customers increasing by 13,000.

Retail Non-Household

The retail Non-Household aspect of the business has seen an increase in costs of £2.8m, taking the cost from £12m to £14.8m.

£2.6m of this increase (93%) is due to the costs related to the sale of a non-household retail business.

The remaining increase in costs is within the general and support costs, as felt across all price controls.

Appendix 4.

Disclosures

This disclosures section provides additional information for our regulator, Ofwat. It contains anything that we must disclose within the Annual Performance Report.

Accounting disclosures:

- a note which describes the link between directors' pay and standards of performance (as required by section 35A of the Water Industry Act 1991 (inserted into that Act by section 50 of the Water Act 2003));
- a statement as to disclosure of information to auditors;
- a statement on dividend policy for the appointed business;
- an accounting policy note for price control units;
- a note on revenue recognition;
- a note on capitalisation policy;
- a note on bad debt policy;
- a statement on sufficiency of non-financial resources;
- a statement on sufficiency of financial resources and facilities;
- License Condition I certificate.
- the tax strategy for the appointed business;
- a statement on differences between statutory and Regulatory Accounting Guidelines (RAG) definitions;
- a long-term viability statement; and,
- a statement explaining out/under performance of the return on regulatory equity (RORE).

Narrative disclosures:

- Outcomes
- Totex
- Retail
- Wholesale revenue control reconciliation
- Current tax reconciliation
- Financial flows
- New connections

Transfer pricing disclosures:

- Loans by or to the appointee
- Dividends paid to any associated company
- Guarantees or other forms of security by the appointee
- Transfer of any asset or liability by or to the appointee
- Transfer of any corporation tax group losses by or to the appointee
- Supply of any service by or to the appointee

Other disclosures

- Information on our corporate structure – this provides additional information to the summary information provided within Section 6 on our governance.
- Corporate governance statement.
- A statement on Directors' responsibility.

Directors' Remuneration Report

Annual Statement from the chair of the Remuneration Committee

On behalf of the remuneration committee, I am very pleased to present the Directors' Remuneration Report for the year ended 31 March 2019.

As a committee we believe in the importance of transparency in relation to remuneration and we strive to ensure we pay our directors fairly in relation to their experience, their performance, the demands and complexity of their role and the experience our customers have, whilst also considering the pay and employment conditions of others in the organisation and also those in the communities which we serve.

The remuneration of our executive directors is weighted towards variable pay to ensure that pay levels are reflective of performance; both financial and non-financial. The performance conditions for variable pay include measures relating to customer experience, stability and reliability of service, health and safety, employee engagement and delivery of our strategic transformation programmes, as well as financial performance, to ensure that remuneration links directly to our strategic objectives and the matters that are important to our people, our customers and our shareholders.

Policy changes

The Remuneration Policy for 2018/19 was set out in the 2018 Annual Report and Financial Statements. We have once again reviewed this policy to ensure it continues to meet the requirements of the business, our shareholders and other key stakeholders. For 2019/20 we are proposing to keep the policy unchanged but to award a pay increase for our executive directors within the parameters of the policy. Further information on this is detailed below.

We are also undertaking a significant policy review, comparing our policy to best practice, organisations of a similar size and other organisations within our own sector. We are being assisted in this review by external remuneration consultants. The recommendations from this review will be presented back to the committee later in 2019 and any changes to the policy as a result of the review will be effective from 1 April 2020 and will be reported in the Directors' Remuneration Report next year.

Board changes

During the year two of our directors stepped down from the board. One of our independent non-executive directors, Teresa Robson-Capps, left on 31 August 2018. Teresa was a member of the remuneration committee. Since the year-end I am delighted to report that we have appointed Andrew Merrick as a replacement for Teresa. Andrew joined us on 1 June 2019 and joined the remuneration committee upon appointment.

Our information on directors' remuneration is structured as follows:

- Annual Statement from the Chair of the Remuneration Committee, providing an overview of the key developments and remuneration decisions made during the financial year.
- Remuneration Policy Report, setting out the Remuneration Policy for 2019/20 that has been recommended by the remuneration committee and approved by our shareholders.
- Annual Report on Remuneration, showing how the Remuneration Policy for 2018/19 has been applied, how we intend to apply the policy for 2019/20 and a summary of the work of the remuneration committee in the year.

Yorkshire Water is a private limited company and our shareholders do not require us to hold an Annual General Meeting (AGM). This report is therefore not subject to approval at an AGM but is presented for information to our stakeholders, to ensure we are transparent in what we pay our directors, and in compliance with the relevant legislation.

In addition, on 31 January 2019, our director of Service Delivery, Pamela Doherty, stepped down from the board and left the business. Further information on the payments made to Pamela upon her departure are included in this report and noted below in the key decisions made by the committee during the year.

Performance

The performance of the business in the year has been similar to the prior year, despite significant challenges as a result of the extreme weather experienced in 2018 through the 'Beast from the East' and an exceptionally dry summer. The company has, once again, delivered 21 out of the 26 Performance Commitments agreed with Ofwat in the five-year business plan to 2020. Improvements have been seen year-on-year in the areas where the target was not quite achieved.

The business has continued to deliver improvements in relation to health and safety and the Lost Time Injury Rate reduced in the year by 32% as a result. Further information on the performance of the business can be found on pages 40 to 45 of the Annual Report and Financial Statements which can be found on our reports webpage www.yorkshirewater.com/reports.

Key decisions by the committee in the year

The committee met on seven occasions during the financial year and there have been a number of key decisions taken, which are outlined below.

Replacement of the Service Incentive Mechanism (SIM) performance measure for the Long-Term Incentive Plan (LTIP) awards made in 2016 and 2017

The LTIPs awarded in 2016 and 2017 contained a measure relating to the SIM, which was a performance commitment included in our five-year plan approved by Ofwat in 2014. This was used as a 'gateway' measure in the LTIP awarded in 2016, which required a set level of performance before any vesting could occur, and as a measure that would reduce vesting by 20% in the event of non-achievement for the award made in 2017.

At the end of 2017 Ofwat confirmed that there was evidence that the SIM measure had a number of limitations and did not incentivise companies to reach the higher levels of customer service achieved in most other sectors, also they noted that it may constrain innovation and did not reflect changing communications technology. They therefore decided that it would no longer be used for measuring customer service from 31 March 2019 and instead would be replaced by the Customer Measure of Experience (C-MeX).

This was discussed by the committee as there was concern that continuing to include SIM as an LTIP measure could lead to expenditure in the business which could be better deployed for other business needs and could motivate behaviour that was not in the best interests of our customers or the business.

The committee reviewed a number of alternative measures relating to customer service which could potentially be suitable as an alternative measure and which would motivate behaviour for the benefit of our customers. It was agreed that Customer Satisfaction and Value for Money, which are two performance commitments derived from an annual survey by the Consumer Council for Water, would be most closely aligned to the interests of customers and our understanding of the future C-MeX measure to be introduced by Ofwat, as well as being independently assessed and assured.

After much consideration, the committee exercised discretion to agree that the SIM measure should be removed for the awards made in 2016 and 2017 and replaced by Overall Customer Satisfaction and Value for Money as measures which, if not achieved, would reduce the vesting by 10% each. The performance conditions would be the same as those for the current performance commitments agreed with Ofwat for each measure.

It was also agreed that to reflect the change in the performance measures at a late stage in the performance period, the vesting level for the 2016 award should be capped at 50%.

Remuneration paid to Pamela Doherty upon her departure

As noted above, one of our executive directors, Pamela Doherty, left the business on 31 January 2019. Pamela was with the business for 16 years and was a member of the board for two periods, firstly as director of HR and Health and Safety from 2011 to 2015 and then in the role of director of Service Delivery from September 2017. We are very grateful to Pamela for her contribution to the company during her time with us.

The committee reviewed the remuneration payable to Pamela upon her departure, taking into account her contractual entitlement and her service to the business and agreed that she should receive a payment of £354,000, to which she was contractually entitled, and £253,000 as compensation for loss of office. Further information on these figures is on page 431 of this report.

Salary review for executive directors

The committee reviewed the pay of the executive directors in March 2019, taking into account the pay increases across the rest of the organisation from 1 April 2019, and also a benchmarking report from Aon Hewitt which compared executive pay to that in comparable companies. The decision was taken that the pay increase for all three executive directors should be set at 3%, to align with the rest of the workforce. This took effect from 1 April 2019.

In addition, the committee exercised discretion to award a further increase of £31,380 (18.61%) to Nevil Muncaster, effective from 1 May 2019, to align him more closely with the market rate for comparable roles in other water companies and those of a similar size outside of the water sector. This increase also recognises the contribution that Nevil makes as an executive director and the additional responsibilities that Nevil has taken on during the year under review.

Annual bonus

The annual bonus has a series of performance measures relating to our customer experience, the financial performance of the business, health and safety and progress in our key strategic projects. The performance of the business in the year indicated a bonus of 64.6% based on the targets that were met. The committee discussed this and agreed that this reflected the performance in the year and the considerable effort that had been made in a challenging year. The bonus was therefore approved and paid in June 2019.


LTIP awards and vesting

LTIP awards were made in April 2018 to the four executive directors who were in post at that time. These were equivalent to 200% of salary for Richard Flint and Liz Barber and an award equivalent to 150% of salary for Nevil Muncaster and Pamela Doherty. These awards have a performance period of three years to 31 March 2021. The performance measures for these awards are detailed further on page 429. These awards are in-line with our remuneration policy and are consistent with prior years.

The LTIP awards that were made in April 2016 reached the end of their performance period on 31 March 2019. Taking into account the change in the performance measures, as noted above, the performance over the three-year period indicated a vesting of 71.4% which was capped at 50% in accordance with the decision of the committee to cap the award following the change in the performance measures. The 50% vesting was approved by the committee and this was paid to participants in June 2019.

Feedback

As a private limited company, our Remuneration Report is not subject to a vote at AGM. We are keen, however, to receive any feedback from stakeholders on our remuneration policy. We are in the process of creating an employee advisory panel to provide direct feedback on a wide-range of topics, including remuneration, to our board and the remuneration committee. In addition, we welcome any other feedback, which may be directed to me via our company secretary, Kathy Smith, who can be contacted at compsec@yorkshirewater.co.uk.



Julia Unwin

Chair of the Remuneration Committee
15 July 2019

Remuneration Policy Report

This Policy Report sets out the Directors' Remuneration Policy for Yorkshire Water and applies from 1 April 2019. As noted earlier in this remuneration report, a thorough review of all aspects of our remuneration policy is currently underway and any changes arising out of this will be included in the Remuneration Policy Report in 2020 and will not take effect before 1 April 2020.

Any existing remuneration commitments or contractual arrangements agreed prior to the implementation of this policy will be honoured in accordance with their original terms.

Remuneration payments and payments for loss of office can only be made during the policy period if they are consistent with this policy or are otherwise approved by our shareholders by an ordinary resolution.

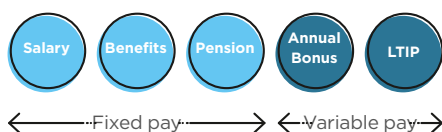
Policy overview

The current remuneration package for directors comprises the elements set out in the table overleaf and remains unchanged from that disclosed in the 2017/18 Directors' Remuneration Report.

In setting the policy, the committee considers a number of factors, including:

- The need to align the remuneration policy with the strategic objectives of the business and the interests of customers;
- The need to achieve an appropriate balance between fixed and performance-related pay to incentivise strong long-term performance and sustained shareholder value creation, whilst not encouraging unnecessary risk-taking or irresponsible behaviour;
- Internal levels of pay and employment conditions across the rest of Yorkshire Water;
- The need to provide a remuneration structure that is sufficiently competitive to attract, retain and motivate executive directors of a high calibre;
- The principles and recommendations set out in the UK Corporate Governance Code, the Wates Corporate Governance Principles for Large Private Companies and the Ofwat Board Leadership, Transparency and Governance Principles; and
- Periodic external comparisons of market trends and practices elsewhere in the water industry and in companies of a similar size, complexity and geographic scope.

The remuneration of our executive directors is made up of five elements:



Our remuneration packages for executive directors are structured to enable upper quartile remuneration for upper quartile performance, considering the relevant market and industry comparators, individual performance, responsibilities and experience.

Our remuneration structure is intended to be simple and transparent and to clearly link pay to performance. Our policy ensures that performance-related components form a significant proportion of the overall remuneration package, with maximum total potential rewards earned only through the achievement of stretching performance targets based on measures selected to promote the long-term success of the company and an enhanced customer experience.

Consideration of pay and employment conditions across the business

The committee considers the pay and employment conditions of employees across the business when setting the Remuneration Policy for the executive directors, to ensure that these are aligned where appropriate. We regularly monitor pay trends across the workforce and salary increases for the directors will normally be in line with those of the wider workforce, in percentage terms.

The committee has not historically consulted directly with employees when drawing up the Directors' Remuneration Policy; however in 2018/19 we have continued to encourage feedback on a variety of matters, including remuneration, through our regular Kelda Voice survey, the feedback from which is reviewed and discussed by the remuneration committee.

From 1 April 2019 we are implementing an employee advisory panel called the Yorkshire Water Colleague Forum which, amongst other things, will be asked to specifically consider views in relation to directors' remuneration. These views will be fed back to the remuneration committee and considered as part of remuneration decision-making in the future.

How the committee may exercise discretion

The committee may exercise discretion in two broad areas for each element of remuneration, as follows:

- To ensure fairness and align executive remuneration with underlying individual and company performance, the committee may adjust, upwards or downwards, the outcome of any annual bonus or LTIP payment within the limits of the relevant plan rules.
- In the case of a non-regular event occurring, the committee may apply its discretion to ensure fairness and seek alignment with business objectives. Non-regular events include, but are not limited to: corporate transactions, changes in the company's accounting policies, administrative matters, internal promotions, external recruitment, terminations, etc.

Any adjustments in light of corporate events will be made on a neutral basis; this means that the intention of any adjustment will be that the event is not to the benefit or detriment of participants. Adjustments due to underlying performance may be made in exceptional circumstances to ensure outcomes are fair both to shareholders and participants.

Any use of discretion by the committee during the financial year will be detailed in the Annual Report on Remuneration each year.

Executive directors' policy table

Component of remuneration and how it supports the Yorkshire Water strategy	How does this operate and what is the maximum that may be paid?	What performance measures are used and why?	Are there any provisions to recover sums paid?
Fixed pay			
<p>Base salary Setting the base salary at the right level enables us to attract and retain the high calibre individuals required to deliver the strategic objectives of the business.</p>	<p>We normally review base salaries annually with changes typically effective from 1 April.</p> <p>The review considers the annual salary increases for the workforce generally as well as any other key internal and external reference points, calibre and performance of the individual. Base salaries are usually set at or below the market median for the role when benchmarked against other water companies or other utility companies, this is offset by higher threshold and target levels of variable pay to encourage a focus on performance.</p> <p>There is no prescribed maximum annual basic salary or salary increase.</p> <p>Increases will not normally exceed the general level of increase for employees across the business in percentage of salary terms; however, we may award higher increases in certain circumstances, for example, where there is a change in responsibility, progression in the role or a significant increase in the scale of the role or the size or complexity of the business.</p> <p>Details of the base salaries for each of the executive directors are shown on page 427.</p>	<p>No specific performance measures are used in relation to determining base salary, but individual and business performance are considered as part of the discussion when setting the base salary levels.</p>	<p>There are no provisions to recover any sums paid.</p>
<p>Benefits Paying the right level of benefits helps us to attract and retain the right individual for the role.</p>	<p>The provision of benefits is set based upon general market practice, considering the benefits available to other employees across the business.</p> <p>The benefits available to executive directors may include a combination of:</p> <ul style="list-style-type: none"> • Private medical insurance for the executive and their spouse; • Life assurance; • A choice of company car-lease or a car allowance of up to £7,500 per annum; • Medical screening and • Optional private fuel provision. <p>Executive directors will be eligible for any other benefits which are introduced for the wider workforce on broadly similar terms.</p> <p>We also reimburse normal business-related expenses for our executive directors.</p> <p>The cost of benefits may vary from year to year and there is no maximum level set.</p>	<p>Benefits are not performance related.</p>	<p>There are no provisions to recover any sums paid.</p>

Component of remuneration and how it supports the Yorkshire Water strategy	How does this operate and what is the maximum that may be paid?	What performance measures are used and why?	Are there any provisions to recover sums paid?
<p>Retirement benefits Retirement benefits are paid as part of a market competitive package which, in turn, helps us to attract and retain high calibre individuals.</p>	<p>Executive directors are entitled to receive a company contribution to the defined contribution stakeholder scheme of up to 30% of basic salary for the chief executive and the director of Finance, Regulation and Markets and up to 24% for the director of Asset Management. Alternatively, executive directors can elect to receive a cash allowance of up to 25% of basic salary for the chief executive and director of Finance, Regulation and Markets and up to 20% for the director of Asset Management, or they may elect to receive a combination of a company contribution to the defined contribution stakeholder scheme and a cash allowance, providing that this is cost neutral to the company.</p>	<p>Retirement benefits are not performance related.</p>	<p>There are no provisions to recover any sums paid.</p>
Variable pay			
<p>Annual bonus The annual bonus is designed to incentivise the achievement of in-year targets that link to a range of both short and long-term business priorities.</p>	<p>The annual bonus is payable in cash.</p> <p>The level of award is determined by the committee after the year-end, based on performance against the performance measures and targets set at the beginning of the year.</p> <p>All bonus payments are at the ultimate discretion of the committee.</p> <p>20% of the maximum annual bonus is payable for achieving the threshold hurdle, rising to 85% of maximum at target level and with payments of up to 100% of salary at maximum level for the chief executive and director of Finance, Regulation and Markets and 70% of salary for the director of Asset Management.</p> <p>The high threshold and target levels reflect the greater emphasis placed on variable pay by the Committee and are offset by base salaries that are usually set at or below the market median.</p>	<p>A balance of financial and non-financial measures is selected by the committee at the start of each year. All targets are clear, stretching and measurable and use a combination of the main Key Performance Indicators for the company and progress on transformational projects.</p> <p>The measures in place for 2018/19 and those agreed for 2019/20 are set out in more detail on pages 427 and 428.</p>	<p>Incentive payments are subject to clawback in the event of misstatement of performance, errors in the assessment of performance conditions, or misconduct.</p>

Component of remuneration and how it supports the Yorkshire Water strategy	How does this operate and what is the maximum that may be paid?	What performance measures are used and why?	Are there any provisions to recover sums paid?
<p>LTIP The long-term incentive scheme is used to ensure focus on the long-term sustainability of the business for both customers and shareholders. This is a significant element of the overall remuneration package and incentivises outperformance against targets.</p>	<p>Awards are normally made annually on 1 April and any amounts that vest are payable in cash.</p> <p>The committee reviews the quantum of awards annually and monitors the continuing suitability of the performance measures.</p> <p>The plan allows a maximum award of 200% of salary per annum for the chief executive and director of Finance, Regulation and Markets and 150 % of salary per annum for the director of Asset Management.</p> <p>Actual award levels will be disclosed each year in the Annual Report on Remuneration.</p>	<p>Awards will typically vest after no less than three years, subject to the achievement of pre-set performance criteria and continued employment.</p> <p>The range of measures ensures executives are focused on customer service, managing assets responsibly and providing appropriate returns to shareholders.</p> <p>The performance conditions for the awards made in 2018 and 2019 are described further on page 431.</p> <p>In addition to the performance measures set out by the committee, there will always be an underpin that the committee must be satisfied that the financial and non-financial performance of the business over the performance period warrants the level of vesting.</p>	<p>Claw back provisions apply for up to two years from the date of vesting of any award, in the event of misstatement of performance, errors in the assessment of performance conditions or misconduct.</p>

Non-executive directors' policy table

Component of remuneration and how it supports the Yorkshire Water strategy	How does this operate and what is the maximum that may be paid?	What performance measures are used and why?	Are there any provisions to recover sums paid?
<p>Fees Fees are set to provide competitive pay to enable us to attract and retain the right calibre of individual and the right balance of skills on the board.</p>	<p>Fees are reviewed when required, subject to market trends.</p> <p>Any increase will be guided by changes in market rates, time commitments and responsibility levels as well as by increases for the broader employee population.</p> <p>The chair is paid an all-encompassing fee to take account of all board responsibilities. The other independent non-executive directors receive a base fee with additional fees paid for additional responsibility, such as the chairing of a committee or performing the role of the senior independent director.</p> <p>The employers of our investor directors receive a fixed fee per annum as set out in our Shareholders' Agreement, signed in 2010.</p> <p>In exceptional circumstances, if there is a temporary yet material increase in the time commitments for non-executive directors, the company may pay extra fees to recognise the additional workload.</p> <p>We reimburse all of our non-executive directors for any normal business-related expenses.</p>	<p>Fees are not performance related; however, performance is addressed through regular one-to-one meetings between the chair and each independent non-executive director. The performance of the chair is reviewed at one-to-one meetings between the chair and the senior independent director.</p>	<p>There are no provisions to recover any sums paid.</p>

How does the remuneration policy for executive directors differ from that of other colleagues?

Overall the remuneration policy set for the executive directors is more heavily weighted towards performance-related variable pay than for other colleagues. As such, a greater proportion of their remuneration is dependent upon the successful delivery of the business strategy.

The key differences are noted in the table below:

Remuneration component	Difference
Base salary	<p>Base salaries are reviewed in the same way for executive directors as for other senior colleagues, taking into account market rate information, internal reference points, individual performance, the scope of the role, the financial performance of the business and the average increases across the rest of the business.</p> <p>Most colleagues are covered by collective agreements which are negotiated based on our principles of affordability, fairness and transparency. The outcome of these negotiations is also taken into account when considering pay increases for other colleagues.</p> <p>We pay all colleagues, contract partners and service providers salaries at least equivalent to the voluntary living wage.</p>
Benefits	<p>An increasing level of benefits is offered to colleagues as their job level increases. Those offered to the executive directors are consistent with those offered to other senior colleagues.</p>
Retirement benefits	<p>All colleagues are entitled to pension contributions from Yorkshire Water. The amount contributed increases as the colleague contribution increases and is also dependent on the job level of the employee. The chief executive and director of Finance, Regulation and Markets receive a slightly higher maximum pension contribution than other employees, at 30% of base salary, with company contributions for other employees ranging from 6% to 24%.</p> <p>We are aware of the UK Corporate Governance Code recommendation to harmonise executive pension allowances with those of the wider workforce and we will be actively considering this as part of the current review of reward that is underway with PricewaterhouseCoopers LLP as independent external consultants.</p>
Annual bonus	<p>All colleagues in bands 1-3 participate in the annual bonus scheme with potential bonuses of up to ten, 15, 30 or 70% of salary, based on seniority. All other colleagues participate in a quarterly bonus scheme, with payments that vary depending on company performance.</p>
Long-term incentives	<p>Long-term incentive awards are made only to those individuals who are most able to directly influence the business strategy. Along with the executive directors, senior managers are also invited to participate in the LTIP. The performance measures and performance period are the same for all participants in the scheme. The level of award increases with seniority.</p>

What might executive directors be paid under the Remuneration Policy for 2019/20?

The charts below indicate how much each of the executive directors might receive under the Remuneration Policy for 2019/20 on a fixed, on-target and maximum basis:

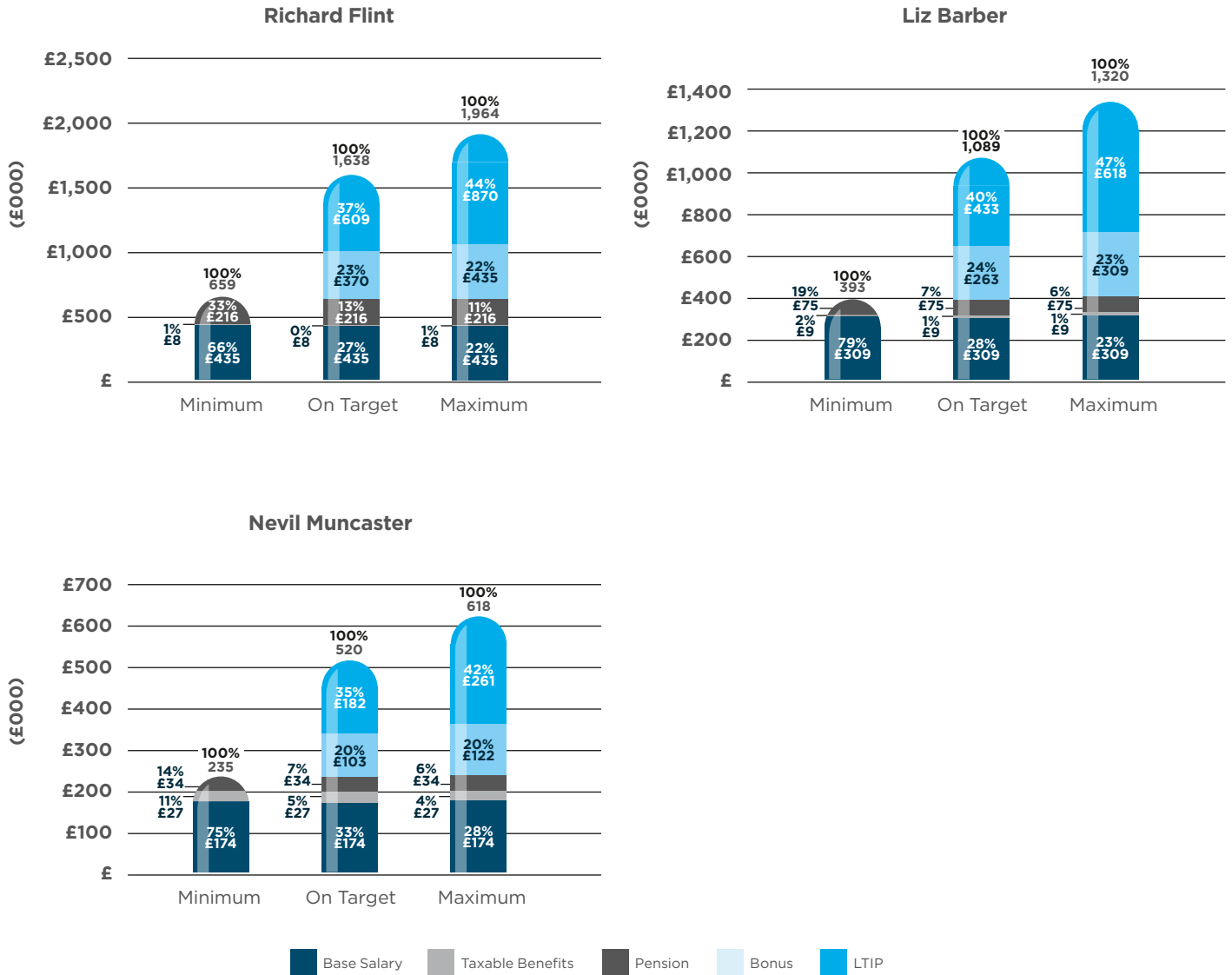


Chart assumptions

The different scenarios shown in the graphs are:

- Minimum – where performance is below threshold and executive directors receive fixed pay only with no vesting under the LTIP and no annual bonus. Fixed pay comprises base salary, benefits and retirement benefits;
- On-target – where executive directors receive their fixed pay plus an annual bonus of 85% of the maximum opportunity and vesting of 70% of the maximum under the LTIP;
- Maximum – where performance meets or exceeds the maximum and the executive directors receive their fixed pay plus the maximum bonus and maximum vesting of the LTIP.

It should be noted that the charts show what could be earned by the executive directors based on the 2019/20 Remuneration Policy described on page 433 and the numbers will therefore differ from those included in the table on page 427 which details what was actually earned by the executive directors in the year to 31 March 2019.

Recruitment policy

The remuneration package for a new executive director would be set in accordance with the terms of the prevailing Remuneration Policy at the time of appointment, considering the skills and experience of the individual, the market rate for a candidate of that experience and the importance of securing the relevant individual.

The table below sets out our policy on the recruitment of new permanent executive directors for each element of the remuneration package:

Remuneration component	Policy on recruitment
Base salary	<p>The salary would be provided at such a level as required to attract the most appropriate candidate. The aim would be to pay at or below the market median when benchmarked against other water companies or other utilities, in line with the current policy for existing executive directors.</p> <p>Where it is appropriate to set a lower salary initially, a series of increases above the level awarded to the wider workforce may be given over the following few years until the desired position is achieved, subject to individual performance. This may apply to those promoted internally in the business as well as to those recruited from outside.</p>
Benefits	<p>The benefits package we will offer will be set in line with the policy for existing executive directors.</p> <p>In addition to the benefits currently available to existing executive directors, we may also offer an allowance to cover relocation, travel and / or incidental expenses as appropriate.</p>
Retirement benefits	<p>The maximum pension contribution will be set in line with the policy for existing executive directors at up to 30% of base salary.</p>
Annual bonus	<p>We will offer an annual bonus in line with our policy for existing executive directors of up to 100% of salary.</p> <p>Different performance measures may be set initially, at the discretion of the committee, depending on the point in the financial year at which the individual joins. The opportunity for an annual bonus will be pro-rated to the period of employment.</p>
Long-term incentives	<p>LTIP awards will be made in line with the policy for other executive directors. In the year of recruitment an award may be made at a date outside of the usual annual awards, at the discretion of the committee.</p>
Buy-outs	<p>In addition to the above, we may also offer additional cash when we consider this to be in the best interests of shareholders and the business. Any such payments would be based solely on remuneration relinquished when leaving the former employer and would reflect, as far as possible, the nature and time horizons attaching to that remuneration and the impact of any performance conditions.</p> <p>Our policy on 'buying-out' of existing incentives granted by the executive's previous employer will depend on the circumstances of recruitment and will be negotiated on a case-by-case basis. There will not be a presumption in favour of buy-out but it will be considered if necessary to attract the right candidate.</p>

In total the maximum variable pay level in the year of appointment – excluding the value of any buy-out awards – will be 300% of base salary, consisting of up to 100% annual bonus and up to 200% LTIP award.

For an internal executive appointment, any variable pay element awarded in respect of the prior role would be allowed to pay out according to its terms, adjusted as appropriate to take into account the appointment. In addition, any other ongoing remuneration obligations existing prior to appointment would be allowed to continue.

Non-executive director recruitment

The fee structure for non-executive director appointments will be based on the non-executive director fee policy as set out in the policy table.

Service contracts

Our policy is to set notice periods for executive directors at 12 months' notice by the company and six months' notice by the director.

The current service agreement dates are set out in the table below:

Director	Date of Appointment	Date of current service agreement
Richard Flint	31 July 2003	11 November 2009
Liz Barber	24 November 2010	30 April 2010
Nevil Muncaster	29 May 2013	13 March 2013

The following non-executive director appointments were made in accordance with Clause 4 of the Shareholders Agreement dated 2010. This permits investors to appoint representatives to the company in accordance with their holdings.

Non-executive director	Appointment
Scott Auty	September 2017
Andrew Dench	September 2017
Mike Osborne	September 2017

Letters of appointment

Independent non-executive directors are appointed by letters of appointment for a period of two years. Appointments may be renewed by mutual agreement for further periods of up to two years subject to a total period of nine years' service with the company. The letters of appointment allow for termination by either party without a requirement for notice.

The appointment of the chairman is for a period of three years and may be renewed by mutual agreement for further periods of up to three years, subject to a total period of nine years' services with the company. The notice period is set at three months for either party.

The dates of the current letters of appointment are noted in the table below:

Director	Date of Appointment	Date of current letter of appointment
Anthony Rabin	August 2013	9 September 2016
Ray O'Toole	June 2014	27 June 2018
Julia Unwin	January 2017	1 January 2019
Andrew Wyllie	September 2017	1 September 2017

Payments to executive directors who leave the business

The table below sets out our policy on payments in relation to executive directors who leave Yorkshire Water.

The committee is clear that contractual entitlements will be honoured, there will be a consistent approach to exit payments and no reward for poor performance. We will not pay anything if an executive director is dismissed for serious breach of contract, serious misconduct or under-performance or for acts that bring the executive director or Yorkshire Water into serious disrepute.

Remuneration component	Treatment on exit
Base salary	Salary will be paid for the contractual notice period. Where appropriate, we will seek to mitigate any payments due, however the committee has discretion to make a lump sum payment on termination in lieu of notice.
Benefits and retirement benefits	Benefits and retirement benefits will normally continue to be provided over the notice period. Where appropriate, we will seek to mitigate any payments due, however the committee has discretion to make a lump sum payment on termination equal to the value of the benefits payable during the notice period.
Annual bonus	Whether an annual bonus payment is made is entirely at the discretion of the committee and would normally be pro-rated to the time of active service in the year of cessation. The decision of the committee would take into consideration the performance of the individual, the circumstances of the departure and the financial performance of the business.
LTIP	Normally awards will lapse on cessation of employment, unless the committee determines that the executive is a good leaver. Good leaver principles have been agreed by the committee and status is usually conferred for one of the following reasons: death, ill health, injury or disability, retirement with the agreement of the company, a change of control, redundancy or other circumstances at the discretion of the committee. Good leavers will be treated in accordance with the rules of the LTIP. In these circumstances a participant's awards vest on a time pro-rata basis subject to the satisfaction of the relevant performance criteria over the original period, with the balance of the awards lapsing. The committee retains discretion to decide not to pro-rate, to alter the basis of the time pro-rating and to alter the date on which performance is calculated if it feels such decisions are appropriate in particular circumstances.

In relation to a termination of employment, the committee may make payments in relation to any statutory entitlement or payments to settle compromise claims as necessary. The committee also retains the discretion to reimburse reasonable legal expenses incurred in relation to a termination of employment and to meet any transitional costs if deemed necessary. Payment may also be made in respect of accrued benefits, including untaken holiday entitlement.

Payments on a change of control, where a director's employment is adversely changed, will be as on termination. There will be no enhanced provisions on a change of control.

The non-executive directors' letters of appointment do not include any compensation for loss of office.

Policy on outside appointments

We believe that where executive directors hold directorships in other companies, Yorkshire Water can benefit from their experience. As a result, and subject to the board's prior approval, executive directors may take on one substantial external non-executive directorship and retain the fees earned.

Departure of Pamela Doherty

Our director of Service Delivery, Pamela Doherty, stepped down from the board on 31 January 2019. All payments to Pamela during the year have been made in accordance with our policy as stated above. Further details on these payments can be found on page 431.

Annual Report on Remuneration

This part of the Directors' Remuneration Report sets out the amounts we have paid to directors for the year ended 31 March 2019 and describes how the policy will be implemented in 2019/20.

The financial information contained in this part of the report has been audited where indicated.

Single total figure table (audited)

	Current directors						Previous directors				Total	
	Richard Flint		Liz Barber		Nevil Muncaster		Pamela Doherty ¹		Charlie Haysom ²			
	FY2019 £'000	FY2018 £'000	FY2019 £'000	FY2018 £'000	FY2019 £'000	FY2018 £'000	FY2019 £'000	FY2018 £'000	FY2019 £'000	FY2018 £'000	FY2019 £'000	FY2018 £'000
Fixed pay												
Base salary	422	412	300	287	169	165	141	89	-	81	1,032	1,034
Taxable benefits	9	9	9	10	27	27	8	6	-	2	53	54
Retirement benefits⁵	216	232	75	72	34	37	29	64	-	42	354	447
Sub-total	647	653	384	369	230	229	178	159	-	125	1,439	1,535
Variable pay												
Annual bonus⁴	273	279	194	195	76	77	76	42	-	38	619	631
LTIP⁵	408	-	284	-	122	-	114	-	-	-	928	-
Sub-total	681	279	478	195	198	77	190	42	-	38	1,547	631
Total	1,328	932	862	564	428	306	368	201	-	163	2,986	2,166

1. Pamela Doherty joined the board on 13 September 2017 and stepped down from the board on 31 January 2019. The payments in the table above reflect the payments made to Pamela whilst in her role as a director.

2. Charlie Haysom stepped down from the board on 12 September 2017. The payments in the table above are shown pro-rata to that date.

3. Kelda Group Pension Plan (KGPP).

Richard Flint and Pamela Doherty are members of the KGPP. This is an unregistered arrangement which gives the following benefits:

	Benefit for each year of service	Additional lump sum for each year of service	Pension per annum accrued as at 31 March 2019 £'000	Lump sum accrued as at 31 March 2019 £'000	Pension per annum accrued as at 31 March 2018 £'000	Lump sum accrued as at 31 March 2018 £'000
Richard Flint	1/40th of pensionable pay	3/40th of pensionable pay	162	185	147	151
Pamela Doherty	1/67th of pensionable pay	3/67th of pensionable pay	58	39	55	32

Normal retirement age is 65 but members may take benefits built up for service prior to 1 April 2013 unreduced from age 60 and benefits accrued from 1 April 2013 unreduced from age 63.

The figures in the Single Total Figure Table above for KGPP members show the change in value of the pension over the year, net of inflation and contributions from the colleague.

Kelda Stakeholder+ Plan

Nevil Muncaster opted for a full salary supplement instead of a contribution to the Kelda Stakeholder+ Plan. He received a cash sum of £33,724 in the year. For 2018 he received contributions to the Kelda Stakeholder+ Plan totalling £26,321 as well as a cash sum, as an alternative to a pension contribution, of £10,967.

Liz Barber opted for a full salary supplement instead of a contribution to the Kelda Stakeholder+ Plan. She received a cash sum of £75,000 in the year (2018: £71,799).

4. The figure for the annual bonus for FY2019 relates to performance for the year ended 31 March 2019, for which the payment was made in June 2019.

5. The figures included above for the LTIP that vested during the year relate to the LTIP awards granted in 2016 which vested on 1 May 2019. Further details of the scheme and the vesting are on pages 429 to 431.

Annual bonus

The annual bonus is designed to reward the delivery of in-year targets. Performance measures are based on a balanced set of performance measures which are linked directly to the corporate strategy. We describe our strategy in our Strategic Report on pages 10 to 15 of the Annual Report and Financial Statements which can be found on our reports webpage www.yorkshirewater.com/reports.

The performance targets are determined by the committee at the start of each financial year, taking into account the current approved five-year business plan, with targets

set to ensure the potential outcomes are affordable and aligned with the annual budget approved by the board.

The annual bonus scheme for 2018/19 consisted of both corporate objectives and transformational programme targets. Up to 70% of the maximum bonus was payable for the corporate objectives and up to 30% of the maximum bonus for progress in relation to transformational programmes.

The scheme and the targets achieved are shown in the table below:

	Threshold level - bonus starts to accrue	Target level - 85% of maximum bonus generated	Maximum level - maximum bonus generated	Actual performance	
Target	Performance required	Performance required	Performance required	Performance level	% bonus triggered
Corporate objectives					
Delivering for our customers					
Achievement of our non-financial performance commitments (10%)	8 out of 12 non-financial performance commitments are met	10 out of 12 non-financial performance commitments are met	12 out of 12 non-financial performance commitments are met	11 out of 12 non-financial performance commitments have been met	8.5%
Achievement of our financial performance commitments, excluding the four upper quartile measures (5%)	Achievement of forecast for 2018/19	Achievement of Business Plan for 2018/19	10% better than forecast for 2018/19	The forecast for 2018/19 was not achieved	0%
Achievement of upper quartile measures in relation to internal sewerage flooding, category 3 pollution events and supply interruption average time lost (15%)	ODI net reward of £1.6 million achieved	ODI net reward of £17.0 million achieved	ODI net reward of £19 million achieved	ODI net reward is £16.3 million	12.4%
Driving efficient financial performance					
EBITDA (30%)	97% of planned EBITDA delivered	100% of planned EBITDA delivered	104% of planned EBITDA delivered	98.7% of planned EBITDA delivered	14.2%
Ensuring everyone, every day is safe and well					
Lost time injury rate (LTIR) (3%), completion of mental health training (1%) and completion of leadership health and safety visits (1%)	LTIR = 0.49	LTIR = 0.45	LTIR = 0.42	LTIR = 0.34	3%
	Training completed = 90%	Training completed = 92.5%	Training completed = 95%	Training completed = 62.3%	0%
	Leadership health and safety visits = 5 per person	Leadership health and safety visits = 6 per person	Leadership health and safety visits = 7 per person	Leadership health and safety visits = 7.3 per person	1%
Investing in our people					
Employee engagement score (5%)	75%	78%	79%	72% in March 2018 and 73% in September 2018	0%
Transformational programmes					
Delivery of company-wide projects of strategic importance driven by the CEO with clear YWLT accountability for delivery (30%)	3 of the 5 programmes are "on plan".	4 of the 5 programmes are "on plan".	5 of the 5 programmes are "on plan".	4 of the 5 programmes are "on plan".	25.5%
Total					64.6%

The actual bonus amount earned by each of the executive directors is shown in the table below:

Bonus 2018/19			
Name	Maximum bonus % opportunity	% of salary earned in 2018/19	£'000
Richard Flint	100%	64.6%	273
Liz Barber	100%	64.6%	194
Nevil Muncaster	70%	45.2%	76
Pamela Doherty ¹	70%	45.2%	76

The bonus payments were considered and approved by the committee in June 2019 and were paid later that month.

The targets that have been agreed for the 2019/20 annual bonus scheme are set out in the table below.

	Threshold level - bonus starts to accrue	Target level - 85% of maximum bonus generated	Maximum level - maximum bonus generated
Target	Performance required	Performance required	Performance required
Achievement of our non-financial performance commitments (10%)	8 out of 12 non-financial performance commitments are met	10 out of 12 non-financial performance commitments are met	12 out of 12 non-financial performance commitments are met
Achievement of our financial performance commitments, excluding the four upper quartile measures (5%)	Net penalty 5% higher than Business Plan for 2019/20	Net penalty as per Business Plan for 2019/20	Net penalty 10% lower than Business Plan for 2019/20
Achievement of all four upper quartile measures (15%)	ODI net reward of £28.8 million achieved	ODI net reward of £30.3 million achieved	ODI net reward of £31.5 million achieved
EBITDA	97% of planned EBITDA delivered	100% of planned EBITDA delivered	104% of planned EBITDA delivered
LTIR (3.33%), completion of leadership health and safety visits (3.33%) and Day 1 referrals by managers to Occupational Health for stress and musculoskeletal conditions (3.33%)	LTIR = 0.26 Leadership health and safety visits = 5 per person Day 1 referrals = 65%	LTIR = 0.23 Leadership health and safety visits = 6 per person Day 1 referrals = 70%	LTIR = 0.20 Leadership health and safety visits = 7 per person Day 1 referrals = 75%
Employee engagement score	75%	78%	79%
Delivery of key initiatives of strategic importance driven by the CEO with clear YWLT accountability for delivery	2 of the 4 programmes are "on plan".	3 of the 4 programmes are "on plan".	4 of the 4 programmes are "on plan".

LTIP

The LTIP is a rolling three-year plan based on the achievement of specific performance conditions with targets set at the start of each performance period. The proportion of the award that vests following the performance period is dependent on the performance of the company during the three-year period.

Awards are usually made with effect from 1 April of each year and details of the specific targets relating to each award are set out in the Annual Report on Remuneration each year.

Awards will not vest unless the committee is satisfied that underlying financial performance has been satisfactory over the performance period, considering any relevant factors, including the regulatory regime in place over the period. The committee has authority to exercise its discretion to reduce the level of vesting to any extent considered appropriate.

Any amounts that vest are paid in cash to participants in June or July of each year.

LTIP awards vesting in 2019

On 1 April 2016, awards were granted to Richard Flint and Liz Barber equivalent to 200% of base salary at that time and to Nevil Muncaster equivalent to 150% of base salary at that time.

The specific targets attached to the LTIP awards granted in 2016, and the performance achieved in the three-year period to 31 March 2019, are shown in the table below.

The awards granted in 2016 originally had a SIM gateway measure however, as noted on page 17, at the end of 2017 Ofwat announced that the SIM measure would be replaced with effect from 2019/20. The committee considered that continuing to include SIM as an LTIP measure could lead to expenditure in the business which could be better deployed for other business needs and could motivate behaviour that was not in the best interests of our customers or the business.

The committee reviewed a number of alternative measures relating to customer service which would motivate behaviour for the benefit of our customers. It was agreed

that Customer Satisfaction and Value for Money, which are two performance commitments derived from an annual survey by the Consumer Council for Water, would be most closely aligned to the interests of customers and our understanding of the future C-MeX measure to be introduced by Ofwat. As these are measures that are independently assessed and assured, the committee exercised its discretion to agree that these could be used as a replacement for the SIM measure in the current LTIP schemes.

The SIM measure was therefore removed for the awards made in 2016 and 2017 and replaced by Overall Customer Satisfaction and Value for Money as measures which, if not achieved, would reduce the vesting by 10% each. The performance conditions would be the same as those for the current performance commitments agreed with Ofwat for each measure.

It was also agreed that to reflect the change in the performance measures at a late stage in the performance period, the vesting level for the 2016 award should be capped at 50%.

Performance Condition	Performance
<p>Customer Satisfaction Survey results from the Consumer Council for Water survey being higher than average performance by Yorkshire Water over the previous AMP (from 2010 to 2015).</p> <p>Value for Money Survey results from the Consumer Council for Water survey being higher than average performance by Yorkshire Water over the previous AMP (from 2010 to 2015).</p>	<p>The average customer satisfaction score in AMP5, from 2010 to 2015, was 92.17. Therefore no reduction in vesting is triggered.</p> <p>The average customer satisfaction score in AMP5, from 2010 to 2015, was 74.83. Therefore [no] reduction in vesting is triggered.</p>
<p>Cashflow performance over the performance period < 90% of target - no LTIP vesting</p> <p>90% but < 100% of target - vesting pro-rated between 1% and 70%</p> <p>100% but < 120% of target- vesting pro-rated between 70% and 100%</p> <p>120 % or higher of target - vesting at 100%</p>	<p>Adjusted EBITDA was slightly behind target due to an increase in operating costs as a result of adverse weather conditions. This indicates a vesting of 71.4%. This indicates a vesting of 71.4%.</p>
<p>Stability and Reliability performance condition 25% of the vesting determined by the two measures above will vest for each of the four Stability and Reliability Measures that are assessed by Ofwat as "stable" or "improving".</p>	<p>All four Stability and Reliability Measures have been assessed by Ofwat as "stable". Therefore, no reduction in vesting is triggered.</p>

The performance in the year therefore indicated a vesting of the 2016 LTIP awards of 71.4%. This vesting is capped at 50%, as noted above.

The committee reviewed the performance of the scheme over the performance period and took into consideration the underlying financial and non-financial performance of the company over that period. It concluded that the vesting

of the scheme should not be reduced any further beyond the 50% cap already imposed and therefore participants would receive 50% of their maximum award, which was paid in cash in June 2019. Further details of the actual amounts received by each of the executive directors are shown in the table on page 427.

Awards made under the LTIP (audited)

For the year 2018/19, awards were made under the LTIP scheme with effect from 1 April 2018. The performance period for these awards runs for three years to 31 March 2021. Any amounts that vest under this scheme will be reported in the Directors' Remuneration Report for the year ended 31 March 2021.

The performance measures agreed for the scheme awarded in 2018 are set out in the table below:

LTIP 2018 design and performance measures

Performance Condition
Cashflow performance over the performance period
< 90% of target - no LTIP vesting
90% but < 100% of target - vesting pro-rated between 1% and 70%
100% but < 120% of target- vesting pro-rated between 70% and 100%
120% or higher of target - vesting at 100%
The amount vesting above would then be reduced for non-performance in the following areas:
<ul style="list-style-type: none"> • Up to 20% reduction for non-performance in relation to people measures; • Up to 40% reduction for non-performance in relation to customer experience; and. • Up to 40% reduction for non-performance in relation to resilience.

These measures were selected by the committee to align the targets for the LTIP participants with the objectives of the business and our commitment to customers, our people and the effective delivery of our services.

The performance period for the LTIP granted in 2018 covers two different AMPs and therefore the measures chosen are believed to be measurable in both periods and are expected to be resilient to the changes that will take place as the business moves from one AMP to another.

Outstanding awards under the LTIP scheme as at 31 March 2019

	Effective date of award	Awards outstanding at 1 April 2018 £'000	Awards made in the year £'000	Vested during the year £'000	Lapsed in the year £'000	Awards outstanding at 31 March 2019 £'000	Face value of maximum award £'000	Award that would vest at threshold performance £'000	Earliest date of vesting
Richard Flint	01.04.2016	816	-	408	408	-	816	571	01.05.2019
	01.04.2017	824	-	-	-	824	824	577	01.05.2020
	01.04.2018	-	845	-	-	845	845	591	01.05.2021
Liz Barber	01.04.2016	569	-	284	284	-	569	398	01.05.2019
	01.04.2017	574	-	-	-	574	574	402	01.05.2020
	01.04.2018	-	600	-	-	600	600	420	01.05.2021
Nevil Muncaster	01.04.2016	244	-	122	122	-	244	171	01.05.2019
	01.04.2017	247	-	-	-	247	247	173	01.05.2020
	01.04.2018	-	253	-	-	253	253	177	01.05.2021
Pamela Doherty	01.04.2016	241	-	114	127	-	241	169	01.05.2019
	01.04.2017	243	-	-	-	243	243	170	01.05.2020
	01.04.2018	-	253	-	-	253	253	177	01.05.2021

Payments for loss of office (audited)

Our policy in relation to exit payments for leavers is set out on page 426.

Pamela Doherty, left the business on 31 January 2019. She was with the business for 16 years and served as the director of Service Delivery on our board since September 2017.

The committee reviewed the remuneration payable to Pamela upon her departure, taking into account her contractual entitlement and her service to the business and agreed that she should receive the following payments:

	£'000
Payment in lieu of notice ¹	273
Annual bonus for 2018-2019	76
Outplacement support	5
Compensation for loss of office	253
Total	607

1. This figure includes base salary, benefits, pension contributions, anticipated annual bonus pro-rated to the notice period and payment in lieu of annual leave.

The committee also agreed that, in accordance with the rules of the LTIP scheme, Pamela would be regarded as a good leaver in relation to the LTIP scheme and would therefore be eligible for any amounts that vest under the 2016, 2017 and 2018 schemes. The amount that Pamela will receive in relation to the award granted on 1 April 2016 is detailed further on page 431 and is included in the table on page 427.

Payments to past directors (audited)

As noted in the Annual Report and Financial Statements 2018, Charlie Haysom stepped down from the board on 12 September 2017. On 1 April 2016, whilst an executive director, he received an LTIP award of a maximum of £243,460, equivalent to 150% of his base salary at that time. As noted on page 431, this award vested on 1 May 2019 at 50% and therefore Charlie received a cash payment of £121,730 in relation to this award in June 2019. Charlie has remained as an employee of the company in the year to 31 March 2019. His remuneration as an employee does not require disclosure in this Remuneration Report.

No other payments to past directors were made in the year.

Non-executive directors

Single total figure table (audited)

The total annual fees paid to each non-executive director are shown below:

£'000	FY2019 £'000	FY2018 £'000
Anthony Rabin ¹	275	275
Raymond O'Toole ²	65	56
Teresa Robson-Capps ³	25	56
Julia Unwin	60	56
Andrew Wyllie ⁴	50	29
Previous non-executive director		
Kathryn Pinnock	-	21

1. The fee for Anthony Rabin includes his other responsibilities in relation to other Kelda Group Limited companies but is shown here in full. The proportion of his time spent on other group companies is recharged to the relevant company. This is explained in more detail in Note 5 of the Annual Report and Financial Statements which can be found on our reports webpage www.yorkshirewater.com/reports.
2. There was a review of non-executive director remuneration performed in September 2018 and the board approved an additional fee of £10,000 per annum to be paid to Ray O'Toole for his role as senior independent director, with effect from 1 October 2018. This is to reflect the additional responsibilities of the role.
3. Teresa Robson-Capps stepped down from the board on 31 August 2017 and as a result received a pro rata fee.
4. Andrew Wyllie was appointed to the board on 1 September 2017 and received a pro rata fee in 2017/18.

The investor directors do not receive any remuneration from Yorkshire Water.

Implementation of policy for 2019/20

The table below sets out how we will implement the Remuneration Policy for the 2019/20 financial year:

	Implementation in 2019/20
Base salary	<p>A base salary increase of 3% for each of the executive directors was agreed by the committee to take effect from 1 April 2019. In addition, a further increase of 18.61% was approved for Nevil Muncaster, with effect from 1 May 2019, to align him more closely with the market rate for his role. The resulting base salaries are as follows:</p> <ul style="list-style-type: none"> • Richard Flint: £434,969 from 1 April 2019 • Liz Barber: £309,000 from 1 April 2019 • Nevil Muncaster: £173,679 from 1 April 2019 and £200,000 from 1 May 2019 <p>Further information for the rationale for this increase is on page 108.</p>
Benefits	Benefits remain unchanged from 2018/19.
Retirement benefits	Retirement benefits remain unchanged from 2018/19.
Annual bonus	The maximum annual bonus for 2019/20 remains unchanged for each executive director at 100% of base salary for Richard Flint and Liz Barber and 70% of base salary for Nevil Muncaster. The performance measures for 2019/20 are set out on page 428.
LTIP	LTIP awards made with effect from 1 April 2019 remain at the same levels as in 2018/19, at 200% of base salary for Richard Flint and Liz Barber and 150% of base salary for Nevil Muncaster. The performance conditions for the period to 31 March 2022 will be disclosed in the Directors' Remuneration Report in 2020.

Non-executive directors

The board does not currently propose any increases to non-executive director fees for the 2019/20 financial year. This will be subject to an annual review, however, in September 2019 with any proposed changes effective from 1 October 2019. The current fees to be paid are set out below:

	£'000
Chairman fee	275
Base independent non-executive director fee	50
Additional fee for committee chair ¹	10
Additional fee for senior independent director	10

1. The additional fee for the role of committee chair is not paid to the chairman for his role as nomination committee chair or his interim role as audit committee chair, nor is any additional fee paid to Richard Flint for his role as social value committee chair. The fees paid to Anthony and Richard, as chairman and chief executive respectively, already encompass their additional roles as committee chairs.

Remuneration committee

	Appointed to the committee	Number of meetings attended	Out of possible
Julia Unwin – Chair since January 2017	January 2017	7	7
Scott Auty	September 2017	7	7
Andrew Dench	September 2017	7	7
Ray O'Toole	June 2014	7	7
Anthony Rabin	June 2016	7	7
Teresa Robson-Capps – until 31 August 2018	January 2017	3	4

The membership and attendance at committee meetings during the year is shown in the table above. Meetings are also attended by the chief executive, the director of Human Resources and the company secretary. Richard Flint, our chief executive, is not present when his own reward is discussed.

The remuneration committee is a sub-committee of the board and has six scheduled meetings a year. Additional meetings are held as and when required. One additional meeting was held in the year in August 2018 to, amongst other things, discuss and approve the Executive Remuneration section of the Price Review 2019 (PR19) submission to Ofwat.

Remuneration of the chief executive

The table below sets out the remuneration for Richard Flint as our chief executive in each of the last seven years:

	FY2019 £'000	FY2018 £'000	FY2017 £'000	FY2016 £'000	FY2015 £'000	FY2014 £'000	FY2013 £'000
Total remuneration	1,328	932	1,328	1,231	1,291	861	1,288
Annual bonus paid against maximum opportunity	64.6%	67.7%	73.5%	60.0%	87.0%	80.0%	85.0%
Long-term incentive vesting against maximum opportunity	50%	-	50%	50%	75%	-	60.0%

Chief executive pay ratio

In line with The Companies (Miscellaneous Reporting) Regulations 2018, we will report the ratio of chief executive's pay to that of the average of all employees in line with the new regulations in our Directors' Remuneration Report in 2020.

This year we have calculated a ratio based on the salary, bonus and vested LTIP of the chief executive in the year, relative to the average total of salary, bonus and vested LTIP of all other employees in employment for the whole of the 2018/19 financial year. This indicates a ratio of 31.19:1 (2018: 19.8:1). The movement in the ratio year-on-year is due to the vesting of the LTIP in March 2019 which has increased the chief executive pay compared to the previous year when the LTIP with the performance period ending in March 2018 did not vest. The LTIP is a scheme specifically for executive directors and selected senior managers to reflect their direct ability to influence the long-term results of the company and to motivate and retain key individuals and align their interests with those of shareholders and other stakeholders.

Change in remuneration

The table below sets out the change in the remuneration of the chief executive from the prior year in comparison to the average percentage change in respect of managers at Yorkshire Water and all colleagues:

	% Change in element between 2017/18 and 2018/19		
	Salary	Taxable benefits ¹	Annual bonus
Richard Flint	2.4% increase	-	2.3% decrease
All employees	2.5% increase	-	7.5% decrease

1. Taxable benefits include healthcare, car allowance and fuel provision for employees who receive such benefits.

Relative spend on pay

The table below sets out the relative spend on pay for Yorkshire Water as a whole in comparison to distributions to shareholders:

	Year ended 31 March 2019 £m	Year ended 31 March 2018 £m	Percentage change
Total remuneration cost for all employees ¹	129.8	118.1	9.9% increase
Total distributions made ²	79.5	88.9	10.6% decrease

1. The total remuneration cost for all employees is taken from Note 4 to the financial statements on page 141 of the Annual Report and Financial Statements which can be found on our reports webpage www.yorkshirewater.com/reports and includes wages and salaries, social security costs and other pension costs.

2. Total distributions made consists of £46.7 million (2018: £60.3 million) of distributions made to allow Kelda Eurobond Co Limited to repay interest and loans to Yorkshire Water and £32.8 million (2018: £28.6 million) of other distributions.

The specific matters considered by the committee at each of the meetings are shown in the table below:

Implementation	Implementation in 2019/20
May 2018	<ul style="list-style-type: none"> • Review and approval of the Remuneration Policy for 2018/19. • Approval of the performance measures for the 2018-2019 annual bonus scheme and the 2018 LTIP award. • An update on gender pay gap reporting. • An overview of succession and talent within the organisation
June 2018	<ul style="list-style-type: none"> • The scope of a strategic review of executive remuneration by third party consultants, Aon Hewitt. • Review of performance for the 2017/18 annual bonus scheme. • Review of performance for the 2015-2018 LTIP
July 2018	<ul style="list-style-type: none"> • Outcome of the strategic review of executive remuneration and consideration of the conclusions and observations made in the review. • Discussion around the appropriateness of continuing with SIM as a metric in the 2016 and 2017 LTIPs. • Review and approval of the Directors' Remuneration Report for the year-ended 31 March 2018.
August 2018 – additional meeting	<ul style="list-style-type: none"> • Review and approval of the Executive Remuneration section of the PR19 submission to Ofwat. • Review and approval of removal of the SIM metric from the 2016 LTIP and 2017 LTIP schemes and its replacement with Overall Customer Satisfaction and Value for Money performance measures. Further information on this change is shown on page 17 of the Annual Report and Financial Statements which can be found on our reports webpage www.yorkshirewater.com/reports.
November 2018	<ul style="list-style-type: none"> • An update on the gender pay gap. • Discussion around employee engagement with the board. • Review of the Terms of Reference of the committee
January 2019	<ul style="list-style-type: none"> • An update on the proposed actions in relation to the gender pay gap report. • A review of the report on the ethnicity pay gap and workplace diversity. • Update on performance in relation to the 2018-2018 annual bonus plan and the 2016 LTIP. • Review of results of the Kelda Voice survey, which was conducted in September 2018 across the Group. • Consideration of the remuneration arrangements in relation to the departure of Pamela Doherty. Further information on this is on page 431.
March 2019	<ul style="list-style-type: none"> • Review of a benchmarking report on executive remuneration from third party consultants, Aon Hewitt, and consideration of the observations made in the report. • Discussion and approval of the proposed pay awards for the executive directors and senior management team, effective from 1 April 2019.

During the year under review, the committee received remuneration advice from Aon Hewitt, who received fees of £57,620 for their advice. This was paid on an ad-hoc basis for specific pieces of work. Aon Hewitt does not provide any other services to the business and is a signatory to the Remuneration Consultants Group Code of Conduct and any advice received is governed by that Code.

The committee has reviewed the way in which Aon Hewitt operates and its relationship with the business and is satisfied that the advice it receives is independent and objective.

It is the intention of the committee to perform a comprehensive tender process in 2019 to select a strategic reward partner to advise the committee in the future.

In accordance with its terms of reference, the committee is responsible for:

- Setting the Remuneration Policy for all executive directors and selected senior managers across the business, considering relevant legal and regulatory requirements, the pay and employment conditions across the company, the view of stakeholders, the alignment to the desired culture of the company and the risk appetite and strategic goals of the business. This includes approving the design of any performance-related pay schemes;
- Considering succession planning for directors and senior executives, taking into account the skills and expertise needed in the future and the need for the development of diverse talent within the business;
- Overseeing the work performed by Human Resources to identify key roles within the business and the mitigation of the risk to business performance if vacated;
- Receiving updates on legislation and best practice in relation to diversity and inclusion and overseeing the initiatives that promote a diverse and inclusive workforce at every level of the organisation, monitoring the impact of these initiatives and reviewing reporting on such matters;
- Reviewing information on remuneration in other companies of comparable scale and complexity;
- Establishing the selection criteria, selecting, appointing and setting the terms of reference for any remuneration consultants who advise the committee;
- Ensuring that contractual terms on termination, and any payments made, are fair to the individual and the company, that failure is not rewarded and that the duty to mitigate loss is fully recognised;
- Overseeing any major changes in employee benefits structures throughout the company; and
- Agreeing the policy for authorising claims for expenses from the directors.

Copies of the Terms of Reference are available from the company secretary or on our website, www.yorkshirewater.com.

Consideration of shareholders' views


The appointment of three directors representing shareholders to the board of Yorkshire Water in September 2017 enables a direct flow of communication and sharing of views by shareholders to the board.

Two directors representing our shareholders sit on the remuneration committee.

Outside appointments

In 2018/19 Liz Barber received £52,250 for her role as non-executive director and chair of the audit committee for KCOM Group PLC. She was entitled to retain this fee. No other fees were received by the executive directors for their outside appointments.

Signed by order of the board



Kathy Smith
Company Secretary
15 July 2019

Statement as to disclosure of information to auditors

Each Director in office at the date of this report confirms, so far as the Director is aware, there is no relevant audit information of which the Company's auditors are unaware; and each Director has taken all the steps as he or she ought to have taken as a Director in order to make him or herself aware of any relevant audit information, and to establish that the Company's auditors are aware of that information.

Statement on dividend policy for the appointed business

A dividend of £79.5m was paid in the year (2017/2018: £88.9m), broken down as follows:

	2019 £m	2018 £m
Gross dividends	79.5	88.9
Dividends used to make inter-company interest payments	(46.7)	(60.3)
Dividends used by Kelda Group to pay head office costs and Kelda Finance interest	(32.8)	(28.6)
Net distributions available to shareholders of Kelda Holdings Limited	-	-

No final dividend for the year is proposed.

The company's dividend policy is to:

- Deliver real growth in dividends recognising the management of economic risks, the continuing need for investment of profits in the business and to pay additional dividends which reflect efficiency improvement, and particularly improvements beyond those assumed in the determination of price limits.
- To pay dividends in respect of the non-regulated business reflecting the profitability of those activities.
- Where it is foreseeable that the company will have sufficient profits available for distribution, to continue to pay annual dividends consistent with this policy. The company can also pay special dividends as part of any capital reorganisation which the board concludes to be in the best interests of the company and complies with its obligations under its licence.

The directors consider that whilst the amount of gross dividends paid has reduced from 2017/2018, the principles of the policy still apply for future years.

Dividends used to make inter-company interest payments of £46.7m (2017/2018: £60.3m) were paid to Kelda Eurobond Co. Limited (a Kelda Group company) to enable Kelda Eurobond Co. Limited to pay Yorkshire Water interest (plus a small element of capital) on two loans that Yorkshire Water has previously made to Kelda Eurobond Co. Limited.

The dividend policy is currently under review, to ensure greater transparency and compliance with regulatory guidelines.

Accounting policy note for price control units

The Annual Performance Tables that contain the regulatory accounts have been prepared in accordance with FRS102, except for capitalisation of interest and the presentation of grants and contributions. Details of all significant accounting policies are detailed with Yorkshire Water's Annual Report and Financial Statements.

Ofwat has implemented four price controls, there are one each for retail water and sewerage services to household and non-household customers, one for wholesale water services and one for wholesale waste water services. Using targeted price controls allows all stakeholders to understand the costs of the company by activity. Yorkshire Water applies all regulatory accounting guidelines to ensure the costs that are reported by the price control segments are consistent, non-discriminatory and transparent. The methodology to achieve these requirements and the governance in place over the process is explained in Appendix 3 Methodology Statement.

Note on revenue recognition

The difference between statutory and regulatory policy on revenue recognition is explained in Section 8 of this APR within table 1 commentary. There is no turnover recognised for unoccupied properties. Yorkshire Water do not bill known unoccupied properties. If a bill is raised and it is subsequently identified that the property is unoccupied then the bill is cancelled and removed from revenue.

Water and sewerage charges fall into the following three categories:

Category	Business Rule applied
Charges payable in full	<ul style="list-style-type: none"> Occupied and benefiting from supply. Unoccupied and benefiting from supply, which includes properties where significant renovation, redecoration or building work is being undertaken and where there is any known regular use of water.
Charges payable in part	<ul style="list-style-type: none"> Metered standing charges, payable on metered properties which are still connected. Surface water charge. Sewerage unmetered tariff, payable on unmetered, occupied properties where the water supply is disconnected but sewerage connection is still provided. Surface water and highway drainage, payable on occupied properties where the water supply is disconnected.
Not chargeable (void properties)	<p>Properties which are unoccupied are not chargeable for water and sewerage therefore no billing is raised and no turnover recognised in respect of these properties. To be classified as unoccupied a property must meet at least one of the following criteria:</p> <ul style="list-style-type: none"> A property is not benefiting from a water supply. A new property has been connected but is empty and not benefiting from supply. The company has been informed that the customer has left the property, it is not benefiting from supply and not expected to be reoccupied immediately. It has been disconnected following a customer request. The identity of the customer is unknown. Where the customer is in a care home, long-term hospitalisation, in prison, overseas long term, temporarily relocated due to a flood or in the event of the death of the customer.

Change in policy revenue recognition from household customers

There has been a change in accounting estimate from the prior year in respect of revenue recognition from those household customers where payment is not considered probable, and this has been applied prospectively. In previous years, management estimated that revenue attributable to customers who were not deemed probable of paying their bills was immaterial, and hence no such amounts were excluded from reported revenues.

Following continued improvements in the available data on a customer by customer basis, in the current year, management have revised the estimate in this regard, and as a result, billed and unbilled amounts receivable, totaling £16.8m, have not been recognised as revenue in the current year on the basis that they are not probable of collection. This reduction in revenue is offset by a consequent reduction in the bad debt charge and bad debt provision of the same amount. This has been reversed in tables 1A to 1C as a statutory to RAG adjustment therefore this is not relevant for the regulatory accounts.

Voids Management Process

Yorkshire Water has a robust process to determine whether a property is occupied and therefore whether charges are due. The occupier is any person who owns a premises or who has agreed to pay water and sewerage services in respect of the premises. The property management process is followed to identify whether the property is occupied or not and if occupied to identify the chargeable person and raise a bill.

Yorkshire Water adopts a risk-based approach to its voids to ensure the process is cost effective, whilst targeting high risk properties. The property management process, therefore, uses several different tools to manage voids including customer telephone contact, mailings, meter readings, residency checks using credit reference agencies and physical inspections. If the property management process confirms that the property is unoccupied, the property will be declared void.

New properties

All new properties are metered. Charges accrue from the date at which the meter is installed. The developer is billed between the date of connection and first occupancy and this is recognised as turnover.

If the developer is no longer responsible for the property and no new occupier has been identified, the property management process referred to above is followed to identify the new occupier. Until the new occupier has been identified the property is treated as unoccupied and is not billed.

Measured Accrual

Measured income of £614.3m (2017/2018: £565.2m) has been billed (in arrears) to customers in the year. The measured income accrual of £77.7m (2017/2018: £67.1m) is an estimation of the amount of water and waste water charges un-billed at the year end.

Key points to consider around this accrual are as follows:

- The accrual calculation is system generated based algorithms. The system methodology uses historical water consumption and tariff data at a customer account level. For high billing value accounts, additional manual adjustments are made where the latest customer intelligence and billing data varies from the system generated calculations.
- Each year following the year end, a review of the actual amount billed against the accrual is conducted to examine the accuracy of the measured accrual. For 2017/2018 the review indicated an overestimation of the measured accrual of £1.4m (2016/2017 £0.9m underestimation).

A consistent approach has been taken in this area.

Note on capitalisation policy

Costs are capitalised following the company's capitalisation policy which states that capital expenditure includes:

- Acquisition of land and buildings.
- Expenditure of more than £3,000 on the construction, provision, purchase, replacement or improvement of other fixed assets or their major renewal. Where individual items each costing less than £3,000 are part of an approved project falling within this definition then the whole of the expenditure is to be capitalised, e.g. Initial furniture and equipment for newly constructed premises.
- Salaries, salaries on cost and associated costs of staff employed on capital works.

The cost of a tangible fixed asset comprises its purchase price and any costs directly attributable to bringing it into working condition for its intended use. Any other costs are treated as operating expenditure.

Directly attributable costs are:

- The labour costs of Group employees arising directly from construction or acquisition of the tangible fixed asset.
- The incremental costs to the Group that would have been avoided only if the tangible fixed asset had not been constructed or acquired.

Administration and other general overhead costs are excluded from the cost of a tangible fixed asset.

Note on bad debt policy

Debt is only written off after all available economic options for collecting the debt have been exhausted and the debt has been deemed to be uncollectable. This may be because the debt is considered to be impossible, impractical, inefficient or uneconomic to collect. Debt may also be written off as part of the customer help schemes that Yorkshire Water offer.

Situations where this may arise and where debt may be written off are as follows:

- Where the customer has absconded without paying and strategies to trace their whereabouts and collect outstanding monies have been fully exhausted.
- Where the customer has died without leaving an estate or has left an insufficient estate on which to levy execution.
- Where the customer does not have any assets/has insufficient assets on which to levy execution.
- Where the age and/or value of the debt makes it uneconomic to pursue - all debts of less than £65 are written off.
- Where county court proceedings and attempts to recover the debt by debt collection agencies have proved unsuccessful.
- Where the customer has been declared bankrupt, is in liquidation or is subject to insolvency proceedings or a debt relief order and no dividend has been or is likely to be received.

Bad and doubtful debts provisions policy

The bad debt provision is charged to operating costs to reflect the company's assessment of the risk of non-recoverability of debtors. It is calculated by applying expected residual debt rates to debts outstanding at the end of the accounting period. These rates take into account the age of the debt, write offs, payment history and type of debt.

A change has been made to the bad and doubtful debts provisioning policy for 2018/2019. The provision is now built on a 'by customer' basis ageing all debt by customer against the oldest invoice date. It is calculated by applying expected residual debt rates to arrears outstanding at the end of the accounting period.

The residual debt values are tracked over a period of 2 years and these rates are then applied to the debts outstanding at the end of the accounting period aged on a 'by customer' basis. The remaining debt values are then fully provided for.

A comparison has been made between the old and new methodologies and the resulting provisions are not materially different.

The bad and doubtful debts provisioning policy is applied to both Unmeasured and Measured accounts.

A provision of £40.4m is held at 31 March 2019 (31 March 2018: £35.0m). The main elements of the provision are as follows:

- £28.0m Unmeasured debtor provision (direct billing). Calculated using information based on the age of debts.
- £11.0m Measured debtor provision. Calculated using information based on the age of debts.
- £0.9m Local Authority provision: The provision for Local Authority debt is based on the potential bad debt should the contract terminate which equates to 58% of the debt.

We have included an additional provision for unbilled metered accounts at the start of this financial year of £1.3m.

As is the case with any accounting estimate, actual amounts recovered may differ from the estimated levels of recovery which would impact on operating results.

The Yorkshire Water website contains details of Yorkshire Water's guide to debt recovery services.

Movement in trade debtor balance

The movement between the 2 years is as follows:

	2017/2018 £m	2018/2019 £m	Movement £m
Trade Debtors	208.8	251.2	42.4
Bad Debt Provision	-35.0	-40.4	-5.4
Total	173.8	210.8	37.0

Statement on sufficiency of non-financial resources

Compliance with paragraph 3.1 of Condition K at the end of the financial year.

As required in paragraph 3.1 of Condition K of the Licence, the directors state that as at 31 March 2019, if a special administration order had been made under the Water Industry Act 1991, Yorkshire Water Services Limited would have had available, in their opinion, sufficient rights and assets (not including financial resources) to have enabled the special administrator to manage the affairs, business and properties of the company so that the purpose of the order could have been achieved.

Certificate on sufficiency of financial resources and facilities

Certificate of Adequacy for the NHH Retail Business (Yorkshire Water Business Services)

In line with the requirements in condition I13 of the Yorkshire Water Services Instrument of Appointment, the directors confirm that:

1. Yorkshire Water Business Services (the NHH Business of the Appointee) shall at all times act in the manner best calculated to ensure that it has adequate: financial resources and facilities; management resources; and systems of planning and internal control, to enable it to secure the carrying out of the Regulated Activities including the investment programme necessary to fulfil its obligations under the Appointment(s).

and that in accordance with condition I17:

2. in the opinion of the Directors, the Appointee will have available to it sufficient financial resources and facilities to enable it to carry out, for at least the next 12 months, the Regulated Activities (including the investment programme necessary to fulfil the Appointee's obligations under the Appointment(s));
3. in the opinion of the Directors the Appointee will, for at least the next 12 months, have available to it:
 - (a) management resources; and
 - (b) methods of planning and internal control

which are sufficient to enable it to carry out those functions as required by paragraph 1 above.

In making this declaration, the Directors have taken into account:

- a) the company's business activities, together with the factors likely to affect its future development, performance, as described within the Strategic Report within the Annual Report and Financial Statements;
- b) the Company's formal risk appetite and management processes which review, monitor and reports on the Company's risks and mitigating controls and considers potential impact on the long-term viability of the company (the long-term viability statement as at 31 March 2019 covers an 11-year period);
- c) the Company's available cash and committed undrawn bank facilities;
- d) the Company's available funds to cover operating and capital investment activities of the company for the twelve months from the date of signing the Financial Statements;
- e) the Company's employment policies and strategy as described in detail in the Directors' Report for the year ended 31 March 2019.
- f) the fact that Yorkshire Water Services intend to, and have received approval from the Secretary of State, to exit the Non-household retail market on the 1 October 2019.

Yours sincerely



Richard Flint
Chairman of the Yorkshire Water Services
Non-household Retail Committee

Signed for and on behalf of the Board of Directors
of Yorkshire Water Services

Certificate of Adequacy for Yorkshire Water (residual business)

In line with the requirements in condition I13 of the Yorkshire Water Services Instrument of Appointment, the directors confirm that:

1. Yorkshire Water Services Limited (the Appointee) shall at all times act in the manner best calculated to ensure that it has adequate: financial resources and facilities; management resources; and systems of planning and internal control, to enable it to secure the carrying out of the Regulated Activities including the investment programme necessary to fulfil its obligations under the Appointment(s).

and that in accordance with condition I17:

2. in the opinion of the Directors, the Appointee will have available to it sufficient financial resources and facilities to enable it to carry out, for at least the next 12 months, the Regulated Activities (including the investment programme necessary to fulfil the Appointee's obligations under the Appointment(s));
3. in the opinion of the Directors the Appointee will, for at least the next 12 months, have available to it:

- (a) management resources; and
- (b) methods of planning and internal control

which are sufficient to enable it to carry out those functions as required by paragraph 1 above.

In making this declaration, the Directors have taken into account:

- a) the company's business activities, together with the factors likely to affect its future development, performance, as described within the Strategic Report within the Annual Report and Financial Statements;
- b) the Company's formal risk appetite and management processes which review, monitor and reports on the Company's risks and mitigating controls and considers potential impact on the long-term viability of the company (the long-term viability statement as at 31 March 2019 covers an 11-year period);
- c) the Company's available cash and committed undrawn bank facilities;
- d) the Company's available funds to cover operating and capital investment activities of the company for the twelve months from the date of signing the Financial Statements;
- e) the Company's employment policies and strategy as described in detail in the Directors' Report for the year ended 31 March 2019.

Yours sincerely



Richard Flint
Chief Executive

Signed for and on behalf of the Board of Directors of Yorkshire Water Services Ltd

Tax strategy for the appointed business

Yorkshire Water is committed to acting with integrity and transparency in all tax matters.

Yorkshire Water's Board has agreed to adhere to the tax strategy and policies adopted by the Kelda Group of which Yorkshire Water is the principal subsidiary. A copy of the Kelda Group tax strategy is publicly available at: www.keldagroup.com/corporate-governance/kelda-group-policies/

and is included below.

Kelda Group Tax Strategy and Policies

Adopted by the Board of Kelda Holdings Limited on 11 July 2018

This strategy applies to the group of companies headed by Kelda Holdings Limited ("the Group") in accordance with Schedule 19 to the Finance Act 2016. It is effective for the year ending 31 March 2019.

The Group's approach to management of its tax affairs is driven by the following Strategic Business Objectives ("SBOs"):

- Trusted Company – the way we do business means our products, services and promises are trusted by all our stakeholders, now and in the future; and
- Strong Financial Foundations – we deliver services to customers at a price they are willing and able to pay, while providing investors with returns that attract long term investment.

Such SBOs mean that the Group has a tax strategy and policies that address the need to build and maintain trust with stakeholders while also generating a fair and sustainable return for investors.

Trusted Company

The Group is committed to acting with integrity and transparency in all tax matters as part of our Trusted Company SBO. Our tax strategy and policies require that we fully comply with both the letter of UK tax law and its application as it was intended. We make timely and accurate tax returns that reflect our fiscal obligations to Government.

We aim for certainty on the tax positions that we adopt, however, tax law can be unclear at times or subject to interpretation. With this in mind, and as a Trusted Company, our policy is:

- not to enter into transactions that have a main purpose of gaining a tax advantage; and
- not to make interpretations of tax law considered to be opposed to the original published intention of the specific law.

To support us in ensuring that we have interpreted tax

law and its intended application correctly, we seek advice from large accounting firms, legal firms and/or tax counsel as appropriate.

For example, we do not use artificial tax avoidance schemes or use tax havens to reduce the Group's tax liabilities. Our small handful of overseas companies have arisen as a result of non-tax driven business decisions and are either in the process of being wound down or are wholly and exclusively resident for tax purposes in the UK. A full explanation of our overseas companies is included within the statutory accounts of Yorkshire Water Services Limited a copy of which can be found on the Yorkshire Water website at: www.yorkshirewater.com/reports

Relationship with HM Revenue & Customs

An important part of our tax strategy and policies, and to support Trusted Company status, is the maintenance of a strong, proactive working relationship with HM Revenue & Customs ("HMRC"). We are transparent with HMRC and, in cases of interpretation or complexity, work with them on a real time basis to determine the amount of tax due.

Tax disclosure

We understand the value of our financial reporting to customers, investors and other stakeholders. We work to provide enhanced, transparent and balanced disclosure in communicating our tax affairs.

Strong Financial Foundations

Managing the Group's tax liabilities by recognising appropriate legislative concessions and reliefs is of benefit to customers (through fair and affordable bills) and investors (through fair and sustainable returns).

In line with the Group's Strong Financial Foundations SBO, the Group's tax strategy and policies seek to make use of such appropriate reliefs and to control the Group's tax costs. Decisions regarding such reliefs are taken using a decision-making framework that addresses the Trusted Company and Strong Financial Foundations SBOs.

Whilst seeking to manage tax liabilities for the benefit of customers and investors, the Group's policy is not to take an aggressive interpretation of tax legislation or use artificial tax avoidance schemes in line with the Trusted Company SBO.

Tax governance

Tax is part of the Finance & Regulation function of our Group and is the ultimate responsibility of the Group Director of Finance, Regulation & Markets who is responsible for the Group's tax strategy and policies.

Tax strategy and policies are reviewed on an on-going basis by the Group's Audit Committee and Board of Directors. Our tax status is reported regularly through the Group's Tax & Treasury Review Group which reports

to the Financeability Governance Group, chaired by the Director of Finance, Regulation & Markets. Tax status is also reported via the Audit Committee through the Group's Strategic Risk Register.

Day-to-day tax matters are delegated to the Head of Tax & Treasury and a team of in-house professionals who hold a combination of accounting and tax qualifications.

Tax strategy and policy issues are assessed on a case by case basis by the Tax & Treasury Team with appropriate input from the Group Director of Finance, Regulation & Markets in conjunction with the Group Chief Executive.

Statement on differences between statutory and Regulatory Accounting Guidelines (RAG) definitions

Differences between statutory and regulatory definitions has been provided within Section 8 of this Annual Performance Report. Line by line explanation of differences and narrative from tables 1A, 1B, 1C and 1D has been provided. We have also provided a narrative explanation on the significant differences and what they relate to.

We have provided a reconciliation of borrowings between Table 1E and Table 1C and an explanation of the reasons for the differences within Section 8 of this Annual Performance Report.

Long term viability statement

We publish our long-term viability statement in our Annual Reports and Financial Statements (ARFS) on page 60 and this is published simultaneously with this Annual Performance Report. Information on how we identify and manage our risks is also included in our ARFS on page 48. Click here to view our ARFS on our reports webpage: www.yorkshirewater.com/reports

Statement explaining out/under performance of the return on regulatory equity (RORE)

The RORE calculation is based on the cumulative position at the end of 2018/2019.

This is based on an average RCV figure of £22,244m at 2012/2013 average prices. A notional gearing of 62.5% has been used.

The base return for the 4 years has been calculated using the 5.65% equity return as included within the PR14 final determination.

All values have been included post tax.

Description	Cumulative %	Cumulative £m
4H.21 Base return	5.65%	471
4H.22 Totex out / (under) performance	(0.10%)	(9)
4H.23 Retail cost out / (under) performance	(0.29%)	(25)
4H.24 ODI out / (under) performance	0.35%	29
4H.25 Financing out / (under) performance	(0.59%)	(49)
4H.26 Other factors	0.00%	0
4H.27 Regulatory return for the year	5.02%	418

The adjustments are explained below:

Table 4H Line 22 Totex outperformance

We have included a cumulative under performance against totex of £9m at 2012/2013 average prices. This has been calculated assuming there is a cumulative £78m timing variance and the FD14 sharing mechanism has been applied.

Table 4H Line 23 Retail underperformance

We have included a cumulative underperformance against PR14 of (£25m) at 2012/2013 average prices. This has been calculated by comparing the actual retail costs reported in table 2C (Section 8 of this report) to the operating cost allowances included within the PR14 final determination.

Table 4H Line 24 ODI reward

We have included a cumulative ODI reward of £29m at 2012/2013 average prices. The explanation of how this has been calculated within section 4.

Table 4H Line 25 Financing impact

We have included a cumulative financing impact of (£49m) at 2012/2013 average prices. This has been calculated by assuming a gearing of 62.5% against the average RCV.

The nominal cost of debt has been taken from Table 1E, line 9 for all four years. This has been adjusted by the average RPI for all years using the Fisher formula.

This calculation provides a real cost of debt for 2015/2016 of 4.46%, 4.13% for 2016/2017, 1.85% for 2017/2018 and 1.80% for 2018/2019 against the 2.59% cost of debt as included within the PR14 final determination.

Table 4H Line 26 Other factors

We currently have no values calculated under this section.

Table 4H Line 27 Regulatory return for the year

This is a sum of lines 4H.21 to 4H.26 and is equal to line 4H.5

Narrative disclosures

We have provided the following narrative disclosures within section 8 of this APR:

- Outcomes
- Totex
- Retail
- Wholesale revenue control reconciliation
- Financial flows
- New connections

Current tax reconciliation

Whilst the Company would be expected to have a current tax credit for the year if the standard rate of corporation tax in the UK (19%) was applied to its loss before tax, a current tax charge is expected. The differences which explain this are set out below:

	£m
Loss before tax in relation to appointed activities	(169.2)
Tax credit at the standard rate of corporation tax in the UK of 19%	(32.1)
<i>Adjustments in relation to fixed assets</i>	
Non-deductible accounting depreciation on fixed assets and amortisation of intangible assets	41.9
Potential capital allowances available to claim on fixed assets (1)	(44.2)
Capital allowances waived and deferred to future years (1)	22.0
<i>Adjustments in relation to financial instruments</i>	
Fair value losses on financial instruments that are disregarded for tax purposes and replaced by an accruals basis of accounting	27.7
<i>Other adjustments</i>	
Chargeable gain crystallising in the year	1.6
Deductible payments to pension scheme	(0.8)
Non-deductible costs (2)	0.9
Non-taxable profits (3)	(1.1)
Adjustments in relation to prior years	0.2
Appointed current tax charge (4)	16.1

- 1) The Company has claimed tax losses in the year from other Kelda Group companies. As a result, the Company has reduced its capital allowance claim on its capital expenditure for the year. This tax relief is deferred to later periods. Utilising tax losses in this way and deferring capital allowances will ultimately benefit customers through lower bills in the future.
- 2) Non-deductible costs mainly relate to non-deductible professional fees in relation to non-household retail activities and the Company's provision for potential fines.
- 3) Income reflected in the accounts which is not subject to tax as either there is no cash received by the Company or the income has reduced the amount of capital allowances that can be claimed on the assets associated with the income. This amount also includes an accounting profit in relation to the intra-group disposal by Yorkshire Water of its Cayman Islands subsidiaries to Kelda Group Limited. This will be brought into account in Kelda Group Limited's tax affairs when the Cayman Island companies are dissolved.
- 4) The appointed current tax charge represents payments to other Kelda Group companies as compensation for them surrendering tax losses to the Company. The Company has no current tax charge for the year in relation to corporation tax liabilities owed to HM Revenue & Customs.

The current tax charge allowed in price limits is reconciled to the appointed current tax charge as follows:

	£m
Total current tax charge allowed in price limits (based on corporation tax rate of 20% used in setting prices)	10.0
<i>Tax effect of differences due to:</i>	
Lower actual corporation tax rate (19%) than that estimated when setting prices (20%)	(0.8)
Lower operating profit	(16.6)
Increased finance costs included in corporation tax calculations	(1.8)
<i>Fixed assets</i>	
Assumptions regarding allowable depreciation and potential capital allowance claims	(0.3)
Capital allowances waived and deferred to future years (1)	23.1
<i>Other adjustments</i>	
Chargeable gain crystallising in the year	1.7
Assumptions regarding non tax deductible expenses (2)	0.6
Prior year adjustments	0.2
Appointed current tax charge (3)	16.1

- 1) The Company has claimed tax losses in the year from other Kelda Group companies. As a result, the Company has reduced its capital allowance claim on its capital expenditure for the year. This tax relief is deferred to later periods. Utilising tax losses in this way and deferring capital allowances will ultimately benefit customers through lower bills in the future.
- 2) This mainly relates to reduced amounts paid in relation to pension contributions.
- 3) The appointed current tax charge represents payments to other Kelda Group companies as compensation for them surrendering tax losses to the Company. The Company has no current tax charge for the year in relation to corporation tax liabilities owed to HM Revenue & Customs.

Factors that will impact future tax charges will include:

- planned reductions in corporation tax rates;
- held over chargeable gains, similar to those noted in the tables above, that will crystallise over the next two years; and
- any changes in tax legislation or practice not reflected in the FD.

Transfer pricing disclosures

Loans by or to the appointee

The following points detail Yorkshire Water's transactions with associated companies and its non-appointed business.

Loans between Yorkshire Water and its subsidiaries

Loans between Yorkshire Water and its subsidiary companies are as follows:

1. Yorkshire Water Finance plc

Yorkshire Water Finance plc (YWFplc) is a public limited company incorporated in England and Wales on 2 July 2018 under the Companies Act (registered number 11444372) and has its registered office at Western House, Halifax Road, Bradford, BD6 2SZ, England.

As part of a re-organisation that took place during the financial year, YWFplc was substituted as the issuer on approximately £3 billion of listed bonds and private

notes that had been previously issued by Cayman Island incorporated companies (being Yorkshire Water Services Odsal Finance Limited and Yorkshire Water Services Bradford Finance Limited respectively - both of which are no longer subsidiaries of Yorkshire Water).

YWFplc is a wholly-owned subsidiary of Yorkshire Water and it is intended to conduct all future public bond financings that will be lent to (and guaranteed by) Yorkshire Water to fund Yorkshire Water's extensive regulated capital programme and ongoing operating expenditure ("Totex").

2. Yorkshire Water Services Finance Limited

Yorkshire Water Services Finance Limited (YWSFL) is a private company incorporated with limited liability in England and Wales (registered number 04636719) and has its registered office at Western House, Halifax Road, Bradford, BD6 2SZ, England.

YWSFL is a wholly-owned subsidiary of Yorkshire Water.

YWSFL is the issuer of bonds that have been lent to (and guaranteed by) Yorkshire Water, however YWSFL has not issued any bonds since 2007/2008 and will not issue any bonds in the future as new bonds will be issued by YWFplc.

As at 31 March 2019 Yorkshire Water has guaranteed the following bonds issued by its subsidiaries:

	Nominal £m	Coupon %	Maturity Date Year	Liability at 31 March 2019 £m
Fixed rate				
Yorkshire Water Services Finance Limited	6.703	5.375	2023	5.479
Yorkshire Water Services Finance Limited	7.400	5.500	2027	6.657
Yorkshire Water Services Finance Limited	0.100	6.625	2031	0.783
Yorkshire Water Services Finance Limited	200.000	5.500	2037	195.700
Yorkshire Water Finance Plc	275.000	6.000	2019	274.902
Yorkshire Water Finance Plc	72.300	3.770	2021	87.765
Yorkshire Water Finance Plc	25.100	3.770	2022	30.531
Yorkshire Water Finance Plc	47.200	5.070	2022	57.166
Yorkshire Water Finance Plc	29.900	6.588	2023	29.898
Yorkshire Water Finance Plc	180.800	6.588	2023	180.794
Yorkshire Water Finance Plc	94.300	3.870	2023	115.245
Yorkshire Water Finance Plc	200.000	3.750	2023	193.375
Yorkshire Water Finance Plc	18.800	3.870	2024	23.047
Yorkshire Water Finance Plc	135.500	6.454	2027	135.476
Yorkshire Water Finance Plc	60.000	2.030	2028	59.803
Yorkshire Water Finance Plc	250.000	3.625	2029	262.244
Yorkshire Water Finance Plc	90.000	3.540	2029	102.711
Yorkshire Water Finance Plc	255.000	6.601	2031	254.974
Yorkshire Water Finance Plc	50.000	2.140	2031	49.825
Yorkshire Water Finance Plc	90.000	4.965	2033	105.436
Yorkshire Water Finance Plc	33.800	5.875	2033	30.014
Yorkshire Water Finance Plc	50.000	2.210	2033	49.819
Yorkshire Water Finance Plc	40.000	2.300	2036	39.851
Yorkshire Water Finance Plc	50.000	2.300	2036	49.814
Yorkshire Water Finance Plc	200.000	6.375	2039	198.864
Yorkshire Water Finance Plc	100.000	6.375	2039	104.554
Total fixed rate				2,644.727
Inflation linked				
Yorkshire Water Services Finance Limited	0.100	3.048	2033	(0.837)
Yorkshire Water Services Finance Limited	65.000	1.823	2050	89.540
Yorkshire Water Services Finance Limited	125.000	1.462	2051	177.117
Yorkshire Water Services Finance Limited	85.000	1.758	2054	117.253
Yorkshire Water Services Finance Limited	125.000	1.460	2056	177.048
Yorkshire Water Services Finance Limited	100.000	1.709	2058	137.729
Yorkshire Water Finance Plc	127.800	3.306	2033	166.687
Yorkshire Water Finance Plc	175.000	2.718	2039	234.161
Yorkshire Water Finance Plc	85.000	2.718	2039	122.264
Yorkshire Water Finance Plc	50.000	2.160	2041	59.260
Yorkshire Water Finance Plc	50.000	1.803	2042	59.119
Total inflation linked				1,339.341

Yorkshire Water - banking arrangements

The banking arrangements of Yorkshire Water operate on a pooled basis with its subsidiaries. Bank balances of certain accounts in each subsidiary can be offset with each other.

Dividends paid to any associated company

Amounts paid to the parent company and the underlying dividend policy, are disclosed within the dividend policy in this Annual Performance Report.

Guarantees or other forms of security by the appointee

The main accounts held by YWSL and YWSFL form a pooled arrangement, whereby the balances of both subsidiaries are offset with each other. This facility is subject to a provision of a cross guarantee between YWSL and YWSFL whereby each company guarantees the other's current account liabilities and the account bank. This pooling arrangement has a net overdraft limit of £5.0m.

Transfer of any asset or liability by or to the appointee

During the financial year ended 31 March 2019, Yorkshire Water sold the properties below to Keyland Developments Limited, an associate of Yorkshire Water. These properties were sold at market price per RAG 5.

Asset or liability	Value
Land at Millington	£16,500
Clay Clough Barn	£38,500
Hemingbrough Water Tower	£90,000
Mapplewell WPS	£12,000
Total	£157,000

Transfer of any corporation tax group losses by or to the appointee

Corporation tax group relief received by regulated business £m	Associate surrendering the group relief	Turnover of the associate £m	A statement of the means by which the payment for the group relief has been established	Value of group relief. £m
(0.002)	Loop customer Management Limited	31.439	Prevailing corporation tax rate	(0.000)
52.777	Kelda Eurobond Co Limited	£nil	Prevailing corporation tax rate	10.028
(0.910)	Yorkshire Water Services Odsal Finance Limited	£nil	Prevailing corporation tax rate	(0.173)
14.847	Kelda Finance (No2) Limited	£nil	Prevailing corporation tax rate	2.821
0.526	Kelda Finance (No3) Limited	£nil	Prevailing corporation tax rate	0.100
0.010	Yorkshire Water Services Finance Limited	£nil	Prevailing corporation tax rate	0.002
14.187	Kelda Group Limited	9.858	Prevailing corporation tax rate	2.696
0.392	ThreeSixty Water Limited	0.002	Prevailing corporation tax rate	0.075
0.210	ThreeSixty Water Services Limited	2.422	Prevailing corporation tax rate	0.040
0.153	Kelda Energy Services (Old Whittington) Limited	0.125	Prevailing corporation tax rate	0.029
0.943	KeyLand Developments Limited	6.500	Prevailing corporation tax rate	0.179
2.916	KeyLand 2595 Limited	£nil	Prevailing corporation tax rate	0.554
0.969	KeyLand (Midpoint) Limited	0.019	Prevailing corporation tax rate	0.184
87.019				16.534

Notes for the transfer of any corporation tax group losses by or to the appointee table

- 1) Negative amounts in the table are as a result of reductions in the amount of group relief that was claimed by Yorkshire Water from the indicated associated company for prior years
- 2) The figures above also include amounts accrued for payment by Yorkshire Water to associated companies in relation to capital losses

Supply of any service by or to the appointee

A significant proportion of the activities identified within retail (household and non-household) are performed by separate companies, Loop and Three Sixty, both of which are UK based companies. All the costs associated with these contracts are charged to Yorkshire Water via an annual contract fee. Yorkshire Water, Loop and Three Sixty companies are wholly owned subsidiaries of Kelda Group Limited.

In April 2016 Yorkshire Water entered into an outsource agreement with Three Sixty. This contract was in preparation of the market opening for non-household (NHH) customers in the following April 2017 and created an arm's length agreement between retail and wholesale. This contract was agreed on a fixed price fee with the value derived from the final determination, it included an element of management fee for Three Sixty. Three Sixty continued to use Loop's customer service function to fulfil Yorkshire Water's requirements and formed a separate contract with Loop to do this. As part of the groups strategy to focus on wholesale and household retail activities the sale of the non- household retail customer base is expected to complete by the end of 2019.

Yorkshire Water receives supply of services from associates within the Kelda Group. These charges are for corporate functions including teams such as Finance, Internal Audit & KTML.

The below table shows the services received by the regulated company in accordance with the threshold of 0.5% appointed turnover or greater than £100k.

Services received by regulated business	Associate Company (providing service)	Turnover of the associate £m	Terms of supply	Value of service received by regulated business £m
Corporate charges	Kelda Group Limited	9.858	Cost allocation	8.933
Customer services (HH)	Loop Customer Management Limited	31.439	Cost allocation	27.917
Customer services (NHH)	Three Sixty Water Limited	7.911	Fixed contract price	7.911
Property services	Keyland	6.500	Cost allocation	0.096
Transport Management	KTML	1.388	Management charge	1.388

Yorkshire Water also charges Kelda Group / associates for any support service function activity this includes functions such as IT, facilities charges and other variety common services within the Group. The cost and revenues associated with this is allocated to non-appointed and follows RAG 5 guidelines. The strategic decision by the company's parent company to seek of disposal of non-regulated businesses, with the majority of the companies sold in previous reporting year (2017/2018) and further companies sales completed in the current reporting period (2018/2019).

The table below shows these recharges.

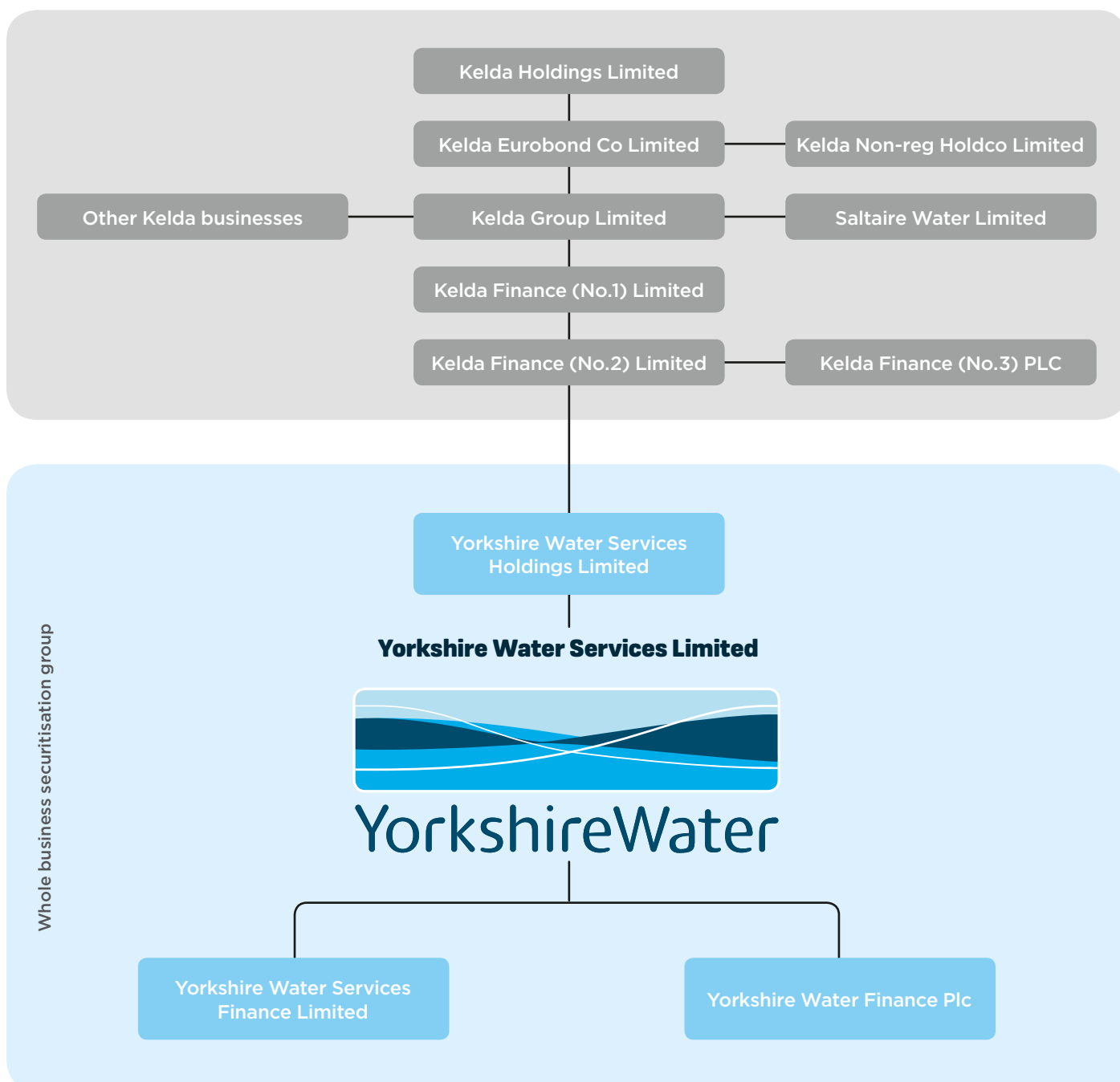
Services provided by regulated business	Associate Company	Turnover of the associate £m	Terms of supply	Value of service provided by regulated business £m
Business support services	Kelda Group Limited	9.858	Cost allocation	0.922
	Loop Customer Management Limited	31.439	Cost allocation	1.704
	Three Sixty Water Limited	7.911	Cost allocation	0.229
	Kelda Water Services	24.518	Cost allocation	0.189

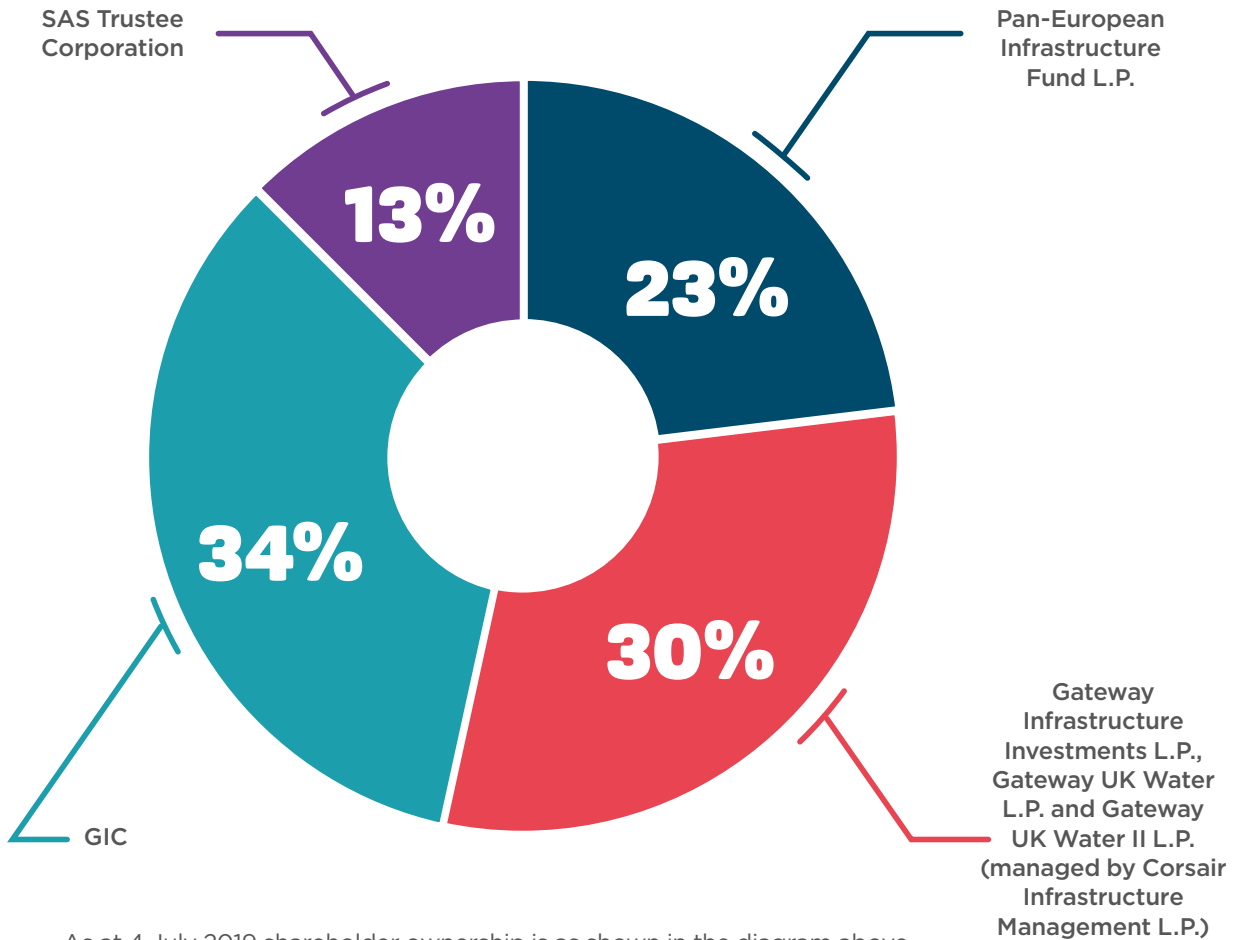
Other disclosures

Information on our corporate structure – this provides additional information to the summary information provided within Section 7 on our governance.

Corporate structure

Yorkshire Water Services Limited is part of the Kelda Holdings Limited group of companies. The diagram below shows a summary of the companies in the group structure around Yorkshire Water Services Limited. Other active companies are described on the following page. We have condensed this structure to remove our inactive companies which exist for legacy reasons but are no longer in use.





As at 4 July 2019 shareholder ownership is as shown in the diagram above.

Summary of Group company activities

The details and activities of the companies within the condensed group structure chart above are as follows:

Kelda Holdings Limited – the ultimate parent undertaking within the Group. The Company is incorporated in Jersey and is wholly and exclusively resident for tax in the UK. The Company was incorporated in Jersey because Jersey law allows greater choice than the UK as to the way distributions can be made to shareholders.

Kelda Eurobond Co Limited – a Group subsidiary incorporated in England and Wales and wholly and exclusively resident for tax in the UK. It was incorporated for the purposes of issuing bonds (i.e. corporate debt) as part of the acquisition of the shares of Kelda Group Limited (formerly Kelda Group Plc) by the shareholders in 2008. This bond debt meets the eligibility requirements of the “quoted Eurobond exemption”. All bond debt issued by Kelda Eurobond Co Limited is held by the shareholders of Kelda Holdings Limited. The bonds issued by Kelda Eurobond Co Limited are listed on The International Stock Exchange in the Channel Islands (TISE). TISE is regarded by the UK’s HMRC as a recognised stock exchange for the purposes of the quoted Eurobond exemption. Listing on TISE was chosen rather than the London Stock Exchange (LSE) for ease of administration, since the bonds in question are not traded the greater administrative requirements imposed by the LSE are not necessary.

Kelda Non-reg Holdco Limited – a Group subsidiary incorporated in England and Wales and wholly and exclusively resident for tax in the UK. The Company's primary activity is to provide finance for Kelda Group's non-regulated businesses (i.e. those businesses other than Yorkshire Water).

Kelda Group Limited – originally the ultimate holding company in the Group and formerly a public listed company, Kelda Group Plc. It was incorporated in England and Wales and is wholly and exclusively resident for tax in the UK. Kelda Group Plc's shares were acquired and the Company de-listed in February 2008.

Saltaire Water Limited – this was the acquisition vehicle for the purchase of Kelda Group Limited's shares (formerly Kelda Group Plc) in February 2008. The shares of Kelda Group Limited are now held by Kelda Eurobond Co Limited. The Company was incorporated in England and Wales and is wholly and exclusively resident for tax in the UK.

Other active Kelda businesses

The following Group companies operate in the UK and are wholly and exclusively resident for tax in the UK:

- **Kelda Water Services Limited (KWS)** – operates water and waste water contracts across the UK.
- **Three Sixty Water Limited** – offers water and waste water retail and added value services to non-household customers across the UK.
- **KeyLand Developments Limited (KeyLand)** – manages the Group's surplus property assets, either on its own or in partnership with outside organisations.
- **Loop Customer Management Limited (Loop)** – delivers customer service support to Yorkshire Water that includes billing, debt recovery and incident management.
- **Kelda Transport Management Limited** – provides operating licence compliance and promotes safe and efficient practices for Yorkshire Water's fleet of Large Goods Vehicles.

Following the strategic review conducted during the year ended 31 March 2017, the majority of non-regulated businesses outside of Yorkshire Water including all of those held by KWS have been sold, with the remaining Three Sixty business due to be sold during 2019. This action has enabled Yorkshire Water to enhance the leadership of the business for example by removing potential distractions that arise from other parts of the group.

Kelda Finance (No.1) Limited, Kelda Finance (No.2) Limited and Kelda Finance (No.3) PLC – these companies were incorporated to issue debt and raise loan financing facilities outside of the Yorkshire Water Whole Business Securitisation ringfenced structure (described below). They are all incorporated in England and Wales and are wholly and exclusively resident for tax in the UK.

Yorkshire Water Services Holdings Limited – incorporated in England and Wales and wholly and exclusively resident for tax in the UK. The Company is the immediate holding company of Yorkshire Water Services Limited.

Yorkshire Water Services Limited – incorporated in England and Wales and wholly and exclusively resident for tax in the UK. This is the main company in Kelda Group, providing water and waste water services to the Yorkshire region.

Yorkshire Water Finance Plc and Yorkshire Water Services Finance Limited – these companies, along with Yorkshire Water Services Limited and Yorkshire Water Services Holdings Limited, are the companies within the Yorkshire Water Whole Business Securitisation ringfence as described on the next page.

Yorkshire Water Whole Business Securitisation

Yorkshire Water established a financing structure known as a Whole Business Securitisation (WBS) in 2009. The WBS enhances the creditworthiness of Yorkshire Water by setting strict rules to give long-term lenders confidence that the Company is a safe and reliable business in which to invest. Therefore, Lenders have been more prepared to lend to Yorkshire Water at lower rates of interest than would otherwise been the case.

The WBS works by placing a protective ring-fence around Yorkshire Water's business that includes the way it operates, the way it trades with other group companies outside the WBS, and the way it finances itself. The protections include limits on borrowings, dividends and the ability to lend money to other Kelda companies. The protections also require profits to more than cover the amount of interest that Yorkshire Water pays, thereby providing assurance that the Company can service its debt.

All the companies within the WBS ring-fence are incorporated in England and Wales and are wholly and exclusively resident for tax in the UK. Yorkshire Water Finance Plc is the principal financing company for Yorkshire Water and holds corporate debt issued since the establishment of the WBS. Yorkshire Water Services Finance Limited is a legacy financing company that holds debt issued prior to the WBS being established. In both instances, funds raised from debt issuance have been on-lent to Yorkshire Water Services Limited to fund its operating and capital requirements.

We have published two videos on our website to explain our financial and corporate structure. Here is the link to the videos. www.yorkshirewater.com/tax

Corporate governance statement

The Board confirms that it has complied with the Code throughout the year under review except for the following matters:

- **A.4.1** The Board did not appoint a Senior Independent Director for the period to 12 July 2017 when Ray O'Toole was appointed to the role, upon recommendation by the Nomination Committee. The role was previously held by Anthony Rabin until his appointment as Chairman in September 2016. For the period from September 2016, until the appointment of new Independent Directors to the Board, the appointment remained open and the Board considered that it remained effective and comfortable maintaining this position in the interim. Within this period, the appraisal of the Chairman's performance was carried out by the Board as a whole, supported by the Company Secretary. The Board recognises that the appointment of a Senior Independent Director is a requirement of the Code, to serve as an intermediary for the other Directors and to lead the appraisal of the Chairman's performance. The appraisal of the Chairman's performance was carried out by the Board as a whole in the financial year 2016/2017, supported by the Company Secretary.
- **B.1.1** It is a requirement of the Code that the Board should state its reasons if it determines that a Director is independent, despite their serving on the Board for more than nine years. As noted above, Kath Pinnock served on the Board for nine and a half years when she stepped down on 31 August 2017. The extension of her term of appointment beyond nine years was considered by the Board appropriate to enable a thorough search for new independent Non-Executive Directors to be undertaken, which concluded successfully with the appointment of Andrew Wyllie on 1 September 2017. The Board was satisfied that Kath Pinnock remained independent in judgement and character throughout her term of office and regards the extension of her terms of office beyond nine years as being for a minimal period.
- **B.1.2** At the end of the financial year, the Company did not comply with the Code requirement that at least half of the Board, excluding the Chairman, should comprise Non-Executive Directors determined by the Board to be independent. This position occurred with the appointment of additional Directors, representing investors on 13 September 2017. The Board however recognises that the appointments align with Ofwat's expectation that a unitary Board will operate and that the number of investor representatives should be no greater than the number of independents (excluding the independent chair). This is the current position for the Board, who welcome the additional insight and dynamic to Board discussions. Although Board composition will remain under review, the Board believes that this significant change makes it better equipped to focus on its strategy to meet the performance and service needs of all stakeholders, including its customers, the environment, the business and shareholders.
- **B.2.3** The Non-Executive Directors are appointed for specified terms, however as described above, Kath Pinnock's term extended beyond a period of six years. The Board considers that this was appropriate in the circumstances described. Kath Pinnock retained her independence prior to her departure on 31 August 2017 and the Board recognises that there is no adverse impact on the Company in having Directors serve more than a six year term. The Directors are not submitted for re-election at regular intervals and considering the private status of the Company the articles of the Company do not require that the Directors retire by rotation.
- **B.7.1** The Directors are not subject to re-election every three years as the Company is a private company and the articles of the Company do not require that the Directors retire by rotation.
- **E.2** As a private company, the Company is not required to hold an annual general meeting unless the shareholders so request. Representatives from the Board, and the Board committees, meet regularly with shareholders throughout the year as described in this report.

A statement on Directors' responsibility

ARFS prepared to FRS102 - APR prepared to RAGs for each financial year. Under that law the Directors have prepared the financial statements in accordance with United Kingdom Generally Accepted Accounting Practice (United Kingdom Accounting Standards, comprising Financial Reporting Standard 102. The Financial Reporting Standard Applicable in the UK and Republic of Ireland (FRS 102), and applicable law). Under company law the Directors must not approve the financial statements unless they are satisfied that they give a true and fair view of the state of affairs of the company and of the profit or loss of the company for that period. In preparing these financial statements, the Directors are required to:

- Select suitable accounting policies and then apply them consistently.
- Make judgements and accounting estimates that are reasonable and prudent.
- State whether applicable UK Accounting Standards comprising FRS 102 have been followed, subject to any material departures disclosed and explained in the financial statements.
- Notify its shareholders in writing about the use of disclosure exemptions, if any, of FRS 102 used in the preparation of financial statements.
- Prepare the financial statements on the going concern basis unless it is inappropriate to presume that the company will continue in business.

The Directors are responsible for keeping adequate accounting records that are sufficient to show and explain the company's transactions and disclose with reasonable accuracy at any time the financial position of the company and enable them to ensure that the financial statements comply with the Companies Act 2006. They are also responsible for safeguarding the assets of the company and hence for taking reasonable steps for the prevention and detection of fraud and other irregularities.

The Directors are responsible for the maintenance and integrity of the company's website. Legislation in the United Kingdom governing the preparation and dissemination of financial statements may differ from legislation in other jurisdictions.

The Directors' Report was approved by a duly authorised committee of the Board of and is included in the ARFS.

Appendix 5.

Glossary

Term	Definition
AMP	See Asset Management Period.
AMP Adjustment	The revision in the real value of fixed assets arising periodically from improved information in the five-year Asset Management Plan process.
Appointed Business	The appointed business comprises the regulated activities of Yorkshire Water. These are the activities necessary in order for us to fulfil the function and duties of a water and sewerage undertaker under the Water Industry Act 1991.
Arm's-length Trading	Trading in which Yorkshire Water treats the other party, usually an associate company on the same basis as an external party.
Asset Management Period (AMP)	An 'Asset Management Period' is the term given to the five-year period covered by a water company's business plan. AMP1 refers to the first planning period after the water industry was privatised and this covers the period from 1990 to 1995. We are currently in AMP6, which covers 2015 to 2020 and we are now starting to plan through the latest Price Review for AMP7, which will cover 2020 to 2025.
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.
Board	The Board of Yorkshire Water Services Limited is accountable and responsible for the control of the business, its strategy and its decisions. The Board is accountable for the quality of our information and our publications.
Board Audit Committee	Board Audit Committee review the process and controls in place and the level of assurance in place. It reports its views of audit quality to the Board.
Capital Expenditure	Capital Expenditure (capex) is expenditure to acquire or upgrade physical assets such as property, pipes and treatment works.
Company Monitoring Framework	Ofwat's framework that sets out the way in which companies provide performance information to their customers and stakeholders between 2015 and 2020.
Confidence Grades	Confidence Grades combine elements of reliability and accuracy to provide a clear base for companies to qualify their data.
Consumer Prices Index	The Consumer Prices Index is a measure of economic inflation based on a set series of goods and services set by the Office for National Statistics. This is the headline measure of inflation used in the Government's target for inflation.
Code	The UK Corporate Governance Code. This sets out good standards in relation to board leadership and effectiveness, remuneration, accountability and relations with shareholders.
Cost Allocation	Cost allocation is the means by which all costs are allocated to appointed and non-appointed businesses, price control units, or specific supplies, works and services, ensuring a fair share of overheads, even where costs cannot be directly attributed to specific activities and associated services.
Cost driver	A cost driver is the factor or factors which cause the cost to occur. This can be further divided between the driver that causes an activity to occur, and a driver that determines how often it occurs. Costs may vary in relation to the cost driver over the short or longer-term, depending on the nature of cost concerned.

Term	Definition
Cross-subsidy	Cross-subsidy in this context is monetary aid or contributions from the appointee to the associate, or between price control units, which does not reflect the value of the services received. It also relates to services provided by the appointee to associate companies where there has been an under-recovery of costs incurred by the appointee.
Customer Side Leakage	Leakage from customer side pipes that form part of our treated water distribution network.
Data Assurance	Processes in place to ensure that the data we produce is accurate.
Day-to-day Controls	These are the activities that we complete every day as part of our front line operations. Everything that we do supports the information that we eventually report. These controls provide the first level of assurance that the information we publish is accurate.
Deadband	Performance level classed as a 'neutral zone' where there is no financial consequence, to account for uncertainty.
Defra	Defra is the Department for Environment, Food and Rural Affairs. It is a UK government department responsible for safeguarding our natural environment, supporting the food and farming industry, and sustaining a thriving rural economy.
Delivery Assurance Groups	These are teams made up of managers and operational colleagues. They are responsible for monitoring our performance as we deliver the performance commitments that we agreed with you.
Deteriorating	We have four performance commitments that are titled Stability and Reliability Factors (S&R factor). These are given an overall assessment of stable, improving or deteriorating. An overall assessment of performance is made based on the performance of several sub-measures. If these fail to meet the levels agreed with Ofwat over a continued period of time, the overall S&R Factor will be assessed as deteriorating.
Final Determination	The outcome of a price review setting out water companies' price limits that will operate for a five-year period and the specific outputs that they will have to deliver. The last final determination was made in 2014 for 2015-2020.
Financial Incentives / Rewards & Penalties	In our business plan, we consulted with you to set stretching performance commitments. We agreed with you that some of our performance commitments would carry a financial as well as a reputational incentive. The incentives are set to reward performance that beats stretching commitments and penalise performance that falls short.
Financing Adjustment	The impact of RPI on the real value of net finance for the business.
Full Time Equivalent	For the purposes of cost allocation, FTEs (or 'full-time equivalents') should include all full-time staff, and contractors/temporary staff directly employed. Where there is an existing contractual arrangement in place with an associate or third party for example a third party billing arrangement, FTEs (or 'full-time equivalents') will include all full-time staff, and contractors/temporary staff directly employed by the associate or third party involved in providing that service to the appointee.
Households	These are properties used as single domestic dwellings (normally occupied), receiving water for domestic purposes which are not factories, offices or commercial premises. These include cases where a single aggregate bill is issued to cover separate dwellings having individual standing charges. (In some instances, the standing charge may be zero.) The number of dwellings attracting an individual standing charge and not the number of bills should be counted. Mixed/commercial properties and multiple household properties – for example, blocks of flats having only one standing charge – should be excluded.

Term	Definition
Improving	We have four performance commitments that are titled Stability and Reliability Factors (S&R factor). These are given an overall assessment of stable, improving or deteriorating. An overall assessment of performance is made based on the performance of several sub measures. If we have substantially exceeded the target over a continued period of time for the majority of the sub measures, the overall S&R Factor will be assessed as improving.
Infrastructure Assets	Infrastructure assets are mainly our below-ground assets, such as pipes, water mains, sewers, dams and reservoirs.
Instrument of Appointment	Water companies operating the public water networks hold appointments as water undertakers, and those operating the public waste water networks hold appointments as sewerage undertakers, for the purposes of the Water Industry Act 1991. They also supply water and waste water services direct to household and non-household customers who are connected to their networks.
ISO 9001: 2015 Quality Standard	ISO 9001:2015 is the internationally recognised Quality Management System (QMS) standard. It is the quality management standard that our regulatory reporting process has been externally judged to meet. By being ISO 9001:2015 accredited, our regulatory reporting process is considered to consistently provide information that meets customer and applicable statutory and regulatory requirements.
Licence	Our licence is also known as the Instrument of Appointment. The Secretary of State for the Environment appoints companies as water and sewerage undertakers. We have been issued with a licence to allow us to deliver the services we do. We need to comply with the requirements of the licence.
Measured	These are properties where some or all of the charges for supplies are based on measured quantities of volumes.
Modern Equivalent Asset (MEA)	The cost of an asset of equivalent productive capability to satisfy the remaining service potential of the asset being valued if the asset would be worth replacing or the recoverable amount if it would not. The gross MEA value is what it would cost to replace an old asset with a technically up to date new asset with the same service capability allowing for any difference both in the quality of output and in operating costs. The net MEA value is the depreciated value taking into account the remaining service potential of an old asset compared with a new asset, and is stated gross of third-party contributions.
MOSL	Market Operator Services Limited (MOSL). They work with Ofwat and water wholesale and retail companies in managing the world's largest water retail market for business customers across England and Wales.
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).
Non-households	These are properties receiving water for domestic purposes but which are not occupied as domestic premises, or where domestic dwellings are combined with other properties, or where properties are in multiple occupation but only have one standing charge. In this case, it is the number of bills that should be counted.
Non-infrastructure Assets	Non-infrastructure assets are those mainly found above ground, such as water and sewage treatment works, pumping stations, laboratories and workshops.

Term	Definition
Ofwat	The Office of Water Services, which is the economic regulator of water services in England and Wales.
Operating Expenditure	Payments for the day-to-day operations of our business, such as operating and maintaining our network and treatment works, paying our staff and our energy bills.
Outcome Delivery Incentive (ODI)	ODIs is a collective term for the financial incentives – positive and negative – that Ofwat has applied to the delivery of our five-year plan. ‘Rewards’ allow us to charge more over the next five years (in this case, 2020-2025), while ‘penalties’ require us to charge less. Some of these ODIs measure performance in each of the five years of our current plan, while others apply only to the whole five years.
Outcome Totex	The total expenditure (totex) we can invest between 2015-2020 allocated between each of our seven customer outcomes.
Penalty Value	(S&R Factors) - The amount of outcome totex the company is required to pay if one or more of the S&R Factors is assessed as deteriorating based on our agreed penalty process. (General) – For ODIs with an associated penalty this is the calculated value based on the extent to which we have failed our agreed target for that ODI, outside of any agreed deadband.
Persistent	We have four performance commitments that are titled Stability and Reliability Factors (S&R factor). Each S&R factor is made up of several sub measures. A sub measure will be labelled as persistently failing where it is recognised that it has been failing over a continued period of time. This will have an impact on the overall assessment for the S&R Factor.
PR14	Periodic Review 2014; the Ofwat periodic review of price limits completed in 2014 to set prices for 2015 to 2020.
PR19	Periodic Review 2019; the Ofwat periodic review of price limits to be completed in 2019 to set prices for 2020-2025.
Price Control Units	At the 2014 price review Ofwat introduced separate binding price controls. These include wholesale water, wholesale waste water, retail household and retail non household.
Price Review (PR)	The price determination process undertaken by Ofwat every five years. Each water and sewerage undertaker submits a Business Plan covering the five-year period for which Ofwat will determine cost and revenue allowances.
Publication Manager	They will review the guidance, design the format of the final report, assign data providers required, develop the timeline for publication, collate all the information, write the publication in Plain English and ensure the publication is delivered on time.
Reference Level	We have four performance commitments that are titled Stability and Reliability Factors (S&R factor). These are given an overall assessment of stable, improving or deteriorating. Each S&R factor is made up of several sub measures. Each sub-measure will have a reference level. This is the minimum yearly performance level expected for each sub measure as agreed with Ofwat.
Regulatory Accounting Guidelines (RAG)	The accounting guidelines for regulatory accounts issued, and amended from time to time, by Ofwat.

Term	Definition
Regulatory Capital Value (RCV)	The capital base used in setting price limits. 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 (i.e. after current cost depreciation and infrastructure renewals accrual).
Regulatory, Financial & Legal Oversight	The teams that provide oversight of the publications, regulations and legal obligations. The teams will review the information and the publications to ensure they meet our requirements and meet any guidance that we have.
Retail	Retail services are customer-facing activities such as billing, account handling (payments, debt management, meter reading), customer queries, as well as water efficiency advice and tackling leaks on customers' pipes.
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.
Risk	An uncertain future outcome that, if it occurs, will have negative effects on the quality of our publications. A risk is assessed both on the probability of it occurring and on the impact should it occur.
Service Incentive Mechanism (SIM)	The Service Incentive Mechanism was introduced by Ofwat to replace the Overall performance assessment (OPA) as a measure of the service customers experience from their water company. It is now in its second year. There are two elements to the SIM: 1) A quantitative measure awards penalty points for issues ranging from callers to our customer centre receiving an engaged tone, through to complaints. 2) A qualitative measure is calculated via telephone interviews to assess the satisfaction of customers who have contacted us to resolve queries.
Stability & Reliability Factor	The four stability and reliability performance commitments agreed with our customers and regulator, Ofwat, to determine our ability to deliver our core water and waste water services and protect public health.
Stability & Reliability Sub-measure	Each of the four Stability and Reliability Factors have several supporting measures. These measures are used to assess the overall S&R assessment of stable, improving or deteriorating.
Stable	We have four performance commitments that are titled Stability and Reliability Factors (S&R factor). These are given an overall assessment of stable, improving or deteriorating. An overall determination of performance for the S&R factor is based on the assessment of a number of indicators and sub measures, which confirm the annual performance levels agreed with Ofwat are being consistently met over a continued period of time.
Targeted Assurance	Areas that we have identified as being important to you or being higher risk should have more assurance to give the confidence that the information is correct.
Total Expenditure (Totex)	Totex (total expenditure) is the mechanism, introduced in PR14 (price review 2014) for planning and reporting capital and operational spend. The object is to achieve the optimum combination to deliver the required business plan outcomes. It applies to both water and waste but not to retail.
Transfer Pricing	A transfer price is the price paid by one group company to another for transactions between the two companies or for transactions within the appointee between price control units or between appointed and non-appointed business.

Term	Definition
UK Customer Service Index (UKCSI)	UK Customer Satisfaction Index (UKCSI) is the national measure of customer satisfaction. It gives a unique insight into the quality of customer service in the UK as a whole and 13 sectors of the economy. It is based on a six-monthly online survey of consumers which is demographically representative of the UK population.
Unmeasured	These are properties where none of the charges for supplies are based on measured quantities of volumes. These include properties which receive an assessed charge because metering is not possible or economic.
Water 2020	An Ofwat work programme, which aims to establish what will be required of water and sewerage companies in the 2019 Price Review.
Water Resource Management Plan (WRMP)	Our 25-year Water Resources Management Plan is updated every five years and sets out how we aim to meet the predicted demand for water in our region over that period.
Wholesale	Wholesale services are the delivery of water via networks of pipes to and from customers' property boundaries, including abstracting, treating and transporting water, as well as collecting, treating and disposing of waste water.
Yorkshire Forum for Water Customers (the Forum)	Independent group of domestic customers, business customers and environmental representatives, to ensure that we continue to be held to account for delivering our commitments and meeting the promises we made to our customers.

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