

# LIVING WATER

Our plan 2020-25 and beyond

**NORTHUMBRIAN  
WATER** *living water*

**ESSEX & SUFFOLK  
WATER** *living water*

[www.nwl.co.uk](http://www.nwl.co.uk)  
[www.eswater.co.uk](http://www.eswater.co.uk)  
[www.nwgourplan.co.uk](http://www.nwgourplan.co.uk)

# Living water: Our plan 2020-25 and beyond

This document is our business plan for 2020-25. The plan is supported by a customer-facing website that can be viewed at [www.nwgorplan.co.uk](http://www.nwgorplan.co.uk).

Northumbrian Water Limited (NWL) serves 2.1m households and businesses in two operating areas covered by Essex & Suffolk Water (ESW) and Northumbrian Water (NW). ESW is a water only company, while NW is a water and wastewater company. This means that for some aspects of the plan we take differing approaches. Much of this plan relates to both ESW and NW, but where this is not the case we make this clear.



## A guide to using this report

This interactive PDF is designed to help you easily navigate the report and find the information you are looking for. For the best experience, it is recommended that this document is viewed in Adobe Acrobat Reader. Interactive functionality may not work when viewed in a web browser or other PDF readers.

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Use the tabs and buttons at the top of the page to navigate between sections and around the document.

### Guide to the navigation buttons:

- Return to interactive contents
- Page back
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Click on the dynamic links throughout the document to access further relevant content.

- [Page reference to more information elsewhere in the document](#)
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### Accessible for everyone

At NWL, we want to ensure that everyone can access the information we provide, so we've installed 'Recite' within our websites. Recite is easy to use and allows readers to adjust the colour contrast settings and increase font sizes as well as offering read aloud functionality, dyslexia software, an interactive dictionary, a translation tool with over 100 languages and many other features. Recite works across all devices.



## Ofwat IAP test areas:

This business plan will be assessed by our economic regulator Ofwat against nine key test areas, as part of its 'Initial assessment of business plans' (or IAP). We have highlighted across our plan where the content maps to the test areas. We have done this using the following abbreviations:

- Engaging customers
- Addressing affordability and vulnerability
- Delivering outcomes for customers
- Securing long-term resilience
- Targeted controls, markets and innovation
- Securing cost efficiency
- Aligning risk and return
- Accounting for past delivery
- Securing confidence and assurance

Cover image: Nick and Grace Atkinson, Jesmond Dene Water Rangers.

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Please note that a glossary of the acronyms used in this business plan has been provided as an appendix.

**A** See Appendix 1.1

## Welcome

We are excited to present our business plan for 2020-25, which has been developed in partnership with our customers and stakeholders.

Our plan clearly sets out our ambition to deliver world class service to our customers and the initiatives we will deliver to achieve this. At the same time our plan delivers a substantial reduction in bills for all of our customers (bills will reduce by 14% for our water customers and by 17% for our wastewater customers by 2024/25), as well as significant improvements for the environment.

**14%**

Reduction in water bills

**17%**

Reduction in wastewater bills

We are confident in our ability to deliver this plan and so are our customers. We know that our plan will achieve what our customers really expect from us because 91% of customers tell us that they support it.

Our plan has been shaped and co-created through thousands of hours of conversations, scrutiny and debate with our customers, the independent Water Forums (the Customer Challenge Groups), partners, employees, our supply chain and other stakeholders. Their voices, concerns and aspirations are reflected throughout our collective plan.

We have learned that it is not always easy to engage all of our customers in technical, complex and regulatory matters and so we've gone far beyond traditional forms of research to encompass innovative participation techniques: leading edge 'design sprints' (a process created and pioneered by Google made up of collaborative, fast-paced events that focus on solutions); ground-breaking innovation festivals; an online community; and a unique, interactive and personalised tool to allow customers to identify their priorities.

In designing our customer participation and engagement programme we looked at what is best practice globally, drawing inspiration from approaches used by others such as Sky, Lego and Dell.

We supported these techniques with in-depth analysis of insights provided by our day-to-day interactions with the full and diverse range of our customers, so that everyone has been able to have their voice heard. As a result we have also learned that people outside of our business are as passionate about what we do as we are.

We would like to take this opportunity to thank all those who have worked with us, and continue to do so, particularly the Water Forums and our customers. The challenge and support we have received means that together we have developed our bold vision for unrivalled service. It is because of these exceptional and collaborative relationships that we can be so ambitious and confident in our plans.

As a business providing water and sewerage services – services that are essential to public health and wellbeing – we are committed to doing all that we can to raise the bar for the industry.



**Heidi Mottram CBE**  
Chief Executive Officer

**Andrew Hunter**  
Chairman,  
on behalf of the Board

## Welcome continued

We are in a good position to do so, given our strong track record of delivery and our culture of innovation. Serving customers in two very different areas, our business benefits from the shared knowledge and continuous learning that comes from this diversity. We also enjoy the advantage of being able to learn from global companies outside of the water industry as a result of being part of the wider CK Group.

We have therefore focused our plan around 14 ambitious goals (shown on pages 8 and 9) that will have a fundamental impact on the way our customers experience their water and wastewater services in future. Underpinning these goals are a series of stretching common and bespoke performance commitments for 2020-25 that will continue to push the performance and efficiency frontier, thereby delivering unrivalled service at an affordable cost for our customers.

Our established culture of innovation will play a critical part in our ability to achieve these commitments whilst lowering bills. We will continue to rise to this challenge by finding new solutions, working in partnership, and adapting the very best from within and beyond the sector. We are privileged to be helped in this task by the rigorous challenge of our unique Innovation Panel, which comprises innovation experts from organisations such as Amazon, Apple and IBM.

Our innovation culture leads us to be forward thinking and our plan focuses on the next five years but is set in a much longer term context – one that sees us providing affordable, reliable and resilient services for today’s generation and for our future customers. In ‘Shaping our Future’ ( [A](#) See Appendix 1.2), published earlier this year, we set out our vision to 2040. The proposals in this plan encompass that vision, and support other strategic documents including our long-term Water Quality Plan, our Water Resources Management Plan, Defra’s 25-year Environment Plan, and our contribution to Water UK’s 21st Century Drainage programme.

Thinking about the resilience of our services over the longer term is not new to us; because we have planned ahead over many years and invested accordingly, we already have a strong track record as responsible custodians of our assets. For this reason we do not need to include large-scale initiatives, such as substantial water resource investments, in our plan. We have a simple, robust capital structure and a prudent level of gearing that will support financial resilience and flexibility into the future. By passing on the benefits of efficiency gains and lower returns for customers we are able to propose lower bills of 14% for our water customers and 17% for our wastewater customers by 2024/25. There will be a significant initial reduction of 12.6% and 12.6% respectively in the first year with further reductions throughout the period. All figures exclude inflation.

**91%**

Overall acceptability of 91% from our customers

As a company we have a strong belief that we should always do things properly and do them well but we are never complacent and will always strive to do better. We touch on many parts of our customers’ lives, and our actions can make a huge difference to them.

For these reasons we are pursuing an agenda to go above and beyond in all that we do: demonstrating our ambition by seeking to eradicate water poverty in our regions; maximising our ‘ripple effect’ to support successful economies in our regions; making sure that our services are fully inclusive for all of our customers – whatever their circumstances; and leaving a lasting legacy through protecting and enhancing our environment and communities. By being transparent and accountable, and by behaving in ways that engender high levels of trust, we will maintain legitimacy in the eyes of our customers.

Our plan has been rigorously assured. The Board of Northumbrian Water Limited is proud of this plan and has played a very active role in shaping and assuring its contents – leading on both the strategic direction and the detail. Individual Board members have also championed our customer engagement and our environment theme.

Our strong past performance, means our customers can count on enjoying the aspects of service that are set out over the pages that follow.

Our plan has achieved a really high level of customer support, demonstrating that this is a high-quality and ambitious plan. We have challenged ourselves at every turn, seeking challenge too from others, both within and beyond the sector, and we have listened and responded to their views. As a result we have set bold and stretching performance commitments; we have considered where we can provide leadership for the benefit of the sector and its customers; and we will continue to act as a high performing and ethical company that is transparent and accountable.

Our customers have played a central role in developing our plan. They are invested in it alongside us and will continue to bring it to life by co-creating our future services and by participating in achieving our shared ambitions.

We look forward to providing them with the exceptional service they have worked with us to articulate, over the next five years and beyond.



**Heidi Mottram CBE**  
Chief Executive Officer



**Andrew Hunter**  
Chairman, on behalf of the Board

## Our plan on a page

### CUSTOMER-FOCUSED

**400,000+**

CUSTOMERS HAVE SHAPED OUR PLAN...



...AND

**500+**

STAKEHOLDER ORGANISATIONS HAVE SHAPED OUR PLAN



### PERSONAL

With world class customer service at the heart of everything we do, so that our customers get what they want, when they want, how they want it.



### INNOVATIVE

Taking advantage of cutting edge research and advances in technology to deliver a better service for our customers more effectively.



### AFFORDABLE

Delivering bill reductions of 14% for our water customers and 17% for our wastewater customers by 2024/25, and eliminating water poverty in our regions.



### AMBITIOUS

With challenging targets to improve our environment, including the best rivers and beaches, zero pollutions from our assets, eliminating all waste, enhancing biodiversity and carbon neutrality by 2027.



### RESILIENT

Ready for the future – by planning ahead and being agile in our responses. As part of this 'resilience in the round', we will deliver 100% water security for the next 40 years.



### LOCAL

Focused on growing our communities, giving time, money and expertise where it matters most.



### TRUSTED

**91%**

OF CUSTOMERS SAY THEY ACCEPT OUR PLAN



## Executive summary

**Our plan is structured across six key themes to deliver the outcomes that matter most to our customers.**

### Unrivalled customer experience

Our customers' expectations are rising, and what customers want from us is changing too. We will deliver a package of measures to support our aim to deliver an unrivalled customer experience.



Our ambitious goals in this area are to:

- Deliver world class customer service; and
- Give every single customer the opportunity to have a strong voice and engage with us, with at least 2m customers participating by 2025.

**53** Find out more in Section 3.1

The innovations in this area that will deliver the difference for our customers are:

- We will horizon scan for examples of excellence in world-wide customer service and continuously benchmark and evolve our Unrivalled Customer Experience Strategy accordingly;
- Our £36m customer experience platform and digital transformation programme 'ONCE', which will mean our customers only have to contact us once and will help us achieve a world class net promoter score (NPS);
- Using our bespoke Participation Ladder as a framework to widen engagement and strengthen the voice of our customers; and
- Co-created campaigns where our customers work with us to promote behaviour-change, including Every Drop Counts, Dwaine Pipe and Rainwise.

### Affordable and inclusive services

Water and sewerage services should be affordable for all of our customers, whatever their circumstances, and they should all have equal access to an unrivalled customer experience.



Our ambitious goal in this area is to:

- Eradicate water poverty in our operating areas by 2030.

**78** Find out more in Section 3.2

The innovations in this area that will deliver the difference for our customers are:

- Lower bills for customers, with a reduction of 14% for our water customers and 17% for our wastewater customers by 2024/25.
- Our Inclusivity Strategy, which was created with our customers and partners so that our services are truly inclusive and deliver 'Water without the Worry' for all customer groups;
- The UK's first and only Water Poverty Unit, established through our strategic partnerships with StepChange and National Energy Action (NEA); and
- 'Pay your own way', an app-based tariff that allows customers to change when and how much they pay, putting them in control of their bills.

### Reliable and resilient services

We will continue to deliver reliable and resilient services by anticipating change, planning ahead, and by making the right long-term decisions about how to run our business.



Our ambitious goals in this area are to:

- Have the lowest levels of leakage in the country in our water-stressed ESW operating area;
- Have a per capita consumption (PCC) for water use of 118 litres per person per day by 2040;
- Promote confidence in our drinking water so that nine out of ten of our customers choose tap water over bottled water; and
- Eradicate sewer flooding in the home as a result of our assets and operations.

**92** Find out more in Section 3.3

The innovations in this area that will deliver the difference for our customers are:

- A new Chief Resilience and Sustainability Officer to manage 'resilience in the round' through our Resilience Framework and provide regional resilience leadership;
- Using big data to develop a 'heat map' approach to tackling leakage, saving 4.75bn litres of water a year;
- Expanding our 'whole town approach' to offer every household a water and energy saving visit, using smart meters and digital platforms to personalise advice;
- Expanding the 'Refill' campaign and our 'Powered by Water' sporting partnerships to change perceptions of drinking tap water and the importance of staying hydrated on the move; and
- Deploying the game-changing sensor technology developed by nuron in our live sewerage system to predict flooding incidents before they occur.



## Executive summary

continued

### Leading in innovation

Super-charging our innovation culture is essential if we are to continue to deliver unrivalled experiences within the context of rising customer expectations, technological advances and changing political and physical climates.



Our ambitious goal in this area is to:

- Be leading in innovation within the water sector and beyond.

**134** Find out more in Section 3.4

The innovations in this area that will deliver the difference for our customers are:

- Our Innovation Panel, which brings together experts from global customer service leaders including Apple, Amazon and IBM to challenge us to get the most from innovation;
- Annual Innovation Festivals engaging over 2,500 people and 500 businesses to push through innovative ideas at scale and speed and promote innovation within our regions, the sector and beyond;
- A Marketplace for Innovation to lead the sector in developing innovative solutions and provide opportunities for promotion, sharing and testing of new ideas;
- Use of digital twins, which are replicas of our physical assets, systems and processes that provide the best environment for us and our partners to experiment and run large-scale simulations using cloud-computing power; and
- Gaining unique insights as the only water company sitting on the CBI's Innovation Council.

### Improving the environment

We will create a step change in our environmental activities, building on our role as stewards of the environment to demonstrate leadership, and to protect and improve the environment within our regions.



Our ambitious goals in this area are to:

- Be leading in the sustainable use of natural resources, through achieving zero avoidable waste by 2025 and being carbon neutral by 2027;
- Demonstrate leadership in catchment management to enhance natural capital and deliver net gain for biodiversity;
- Have the best rivers and beaches in the country; and
- Have zero pollutions as a result of our assets and operations.

**148** Find out more in Section 3.5

The innovations in this area that will deliver the difference for our customers are:

- Further increasing efficiency and capacity in our bioresources activity, which already enables us to turn 100% of our sewage sludge into renewable energy.
- Expansion of TriM and DRIVE, our novel trigger management system and dynamic risk index model, to allow us to prioritise operational activities to protect and improve the quality of rivers and coastal waters;
- A partnership approach to managing pollution and misconnections as part of our pollution management programme, led through our award-winning Water Rangers initiative; and
- Our 'Improving the Water Environment' scheme which will see us invest £2m to work in partnership to enhance the areas of streams, rivers, lakes, reservoirs, wetlands, beaches and coastline that our customers can access.

### Building successful economies in our regions

As a responsible business with a strong track record, it is important to us that we demonstrate leadership and make a wider contribution to life within our regions.



Our ambitious goals in this area are to:

- Spend at least 60p in every £1 with suppliers in our regions;
- Be the most socially responsible water company.

**171** Find out more in Section 3.6

The innovations in this area that will deliver the difference for our customers are:

- Tailored support for our local suppliers on how to contract with us, delivered on their doorsteps via Flo, our community engagement vehicle;
- Intergenerational participation supported by our new Customer and Communities Collaboration Lead to support our #wearefamily community engagement approach;
- At least 50% of our employees volunteering through our Just an hour scheme, donating time and expertise to support our communities; and
- A shared ambition for brilliant partnership working within our regions, through the award-winning Northumbria Integrated Drainage Partnership (NIDP) and the Catchment Based Approach (CaBA) to support delivery of our customer outcomes.

## Executive summary

### continued

#### A co-created plan

The ambitious proposals in our plan have been shaped by conversations with 416,512 of our customers and over 500 other stakeholder organisations who are impacted by our activities. Through our extensive programme of authentic engagement, active participation, research and analysis we are confident that we have a genuine understanding of our customers' and stakeholders' priorities and that together we have co-created the right approaches and solutions. The evidence for this is that 91% of our customers accept our plan.

We have listened to and incorporated the diverse views of all of our customers in our operating areas (including future customers, those who may need additional support, developers and non-household customers). In doing this we drew on expert advice on behavioural economics from Frontier Economics and Emotional Logic. All of the insights were then put through a rigorous triangulation process several times.

The concerns, needs and aspirations of our customers drive our plan; starting with our ambitious goals, inspiring the innovative solutions to achieve them and ending with the exceptional outcomes we will deliver for all of our customers.

# 12.6%

Reduction in water bills in first year

# 12.6%

Reduction in wastewater bills in first year

# 14%

Reduction in water bills by 2024/25

# 17%

Reduction in wastewater bills by 2024/25

#### An efficient and innovative business

Delivering our ambitious goals will not result in increased costs for our customers. As well as delivering above and beyond for our customers and the environment, we are passing on the benefits of efficiency and lower returns to customers by a significant bill reduction of 14% for our water customers and 17% for our wastewater customers by 2024/25.

There will be a significant initial reduction of 12.6% and 12.6% respectively in the first year, with further reductions throughout the period. All figures exclude inflation. This is made possible by continuing to excel at efficiency and innovation.

We are already one of the most efficient companies and in this plan we have assumed further challenging efficiency savings on our costs. We have identified the lowest cost solutions over the long term, optimising our asset plan on the basis of risk and cost, and making sure that expenditure is planned at the right time. We take a total expenditure (totex) approach to our options appraisal, taking account of the whole life cost and efficiency of our schemes. We have worked closely with the quality regulators to make sure that expenditure to meet statutory obligations is justified.

Based on a detailed review of company costs, our assessment is that we are the frontier company for bioresources efficiency, above upper quartile for our wastewater network plus control, and at the upper quartile level for our retail control. This is in spite of the challenges we face given the significant levels of deprivation in many parts of our operating areas. Finally, for water resources and water network plus we have set ourselves challenging targets to reach the upper quartile efficiency level by 2020, and to maintain that position over 2020-25.

Our targets for 2020-25 build on our proven track record on efficiency. This includes outperforming both the baseline set at PR14 and the industry average outperformance to date, and delivering the highest level of wastewater totex efficiency in the sector.

The key to delivering unrivalled service more efficiently than anyone else is to have the right characteristics in place. We have championed an innovation culture for many years, encouraging our employees to be curious and collaborative, with purpose. We target areas where a step change in performance is required, use design thinking to understand the challenge, and apply agile innovation to break new ground. We invest in enablers (such as our Innovation Street) that speed up the process of turning ideas into value.

These approaches complement our commitment to continuous improvement (as evidenced by our recognition as company of the Year in the 2018 UK Excellence Awards) and to emerging science, technology and open innovation, where we work in partnership with thought-leaders, academic researchers and inventors. Our 'BE:WISE' facility, for example, is one of only two in the world where researchers can test innovations in wastewater treatment technologies.

Collaborating with other sectors gives us unique insights into solutions for our own business; our unique Innovation Panel of external experts challenge and inspire our thinking; we use technology from the health and life sciences sector to improve our water quality assessments; and we use data science to extract valuable insights (for example it helped us predict blockages at pumping stations and reduce failures by 80%).

#### A resilient business

Our customers tell us that a reliable water and wastewater service is important to them. Our Resilience Framework provides a structure for us to achieve resilience in the round by taking an integrated and systematic approach to understanding risk and resilience challenges across all of our business areas and how they interact.

## Executive summary

### continued

This allows us to identify common themes and solutions so that we can address risks in an effective and efficient way. By using customer participation, technology, innovation and partnerships to deliver greater resilience, our customers benefit from unrivalled service delivered by leading edge thinking at low cost.

We are taking a number of other important steps to build our resilience including:

- Maintaining the health of our asset base into the future through careful maintenance and wise investment and putting appropriate mitigation measures in place at sites we assess to be 'too critical to fail';
- Initiating a step change in our catchment management activities, as part of our ambitious goals that include reducing our use of natural resources;
- Setting ourselves stretching targets to deliver a reliable and sufficient supply of good quality water to customers and to deal effectively with wastewater, in the context of a changing climate;

- Continuing to carry out long-term planning to secure sustainable water resources into the future, ensuring that we maintain our current position, where water resources are very secure with Essex, Suffolk and the North East projected to have a surplus for at least the next 40 years, even during a 1 in 200 year drought;
- Using intelligent secure networks, sophisticated software and data to help us manage our resources in the most efficient way; and
- Increasing the financial resilience of our poorest households between now and 2030 as we eradicate water poverty in our operating areas.

Our comprehensive business continuity and recovery plans ensure that we maintain service and recover normal operations following any major incident.

### A financeable plan with an appropriate balance of risk and reward

We ensure sound long-term financial resilience by having a robust, simple capital structure in place and a financially sustainable plan.

Our Board assurance statement sets out the steps we have taken to ensure that our plan is financeable for both the notional capital structure and for our actual capital structure. We have assessed financeability in the context of our objective to maintain our existing investment grade credit ratings.

We have rigorously stress tested the plan under a number of plausible scenarios, taking account of the principal risks and uncertainties facing the business, and further severe scenarios specified by Ofwat. We are confident that we would be able to absorb the impact from any of these plausible scenarios, in isolation or in the combinations we have tested, and maintain our investment grade credit ratings by delivering exceptional levels of service and performance for customers, at an efficient level of cost, and by applying our flexible dividend policy.

Our flexible dividend policy is demonstrated by the decisive actions we took in 2017/18 to make sure that we would be in a strong and financeable position for the remaining years of the current price control and then for 2020-25 and beyond.

Separate third party assurance has been performed on the calculations and our stress tests, under each of the various scenarios. We have based the cost of capital that underpins each of our four wholesale price controls, and the net margin that underpins our household retail price control, on those that were set by Ofwat in its final methodology.

As a business we need to continue to borrow significant amounts of money to finance the investment required to maintain and improve services. It is essential that we retain access to low cost finance as this helps keep bills down for customers.



**Initiating a step change in catchment management.**



**We have rigorously stress tested the plan under plausible scenarios and we are confident we can absorb the impact from these scenarios.**

Our plan delivers the financial ratio levels consistent with maintaining our ability to continue to borrow at attractive rates.

We have proposed significant bill reductions for customers from 2020, which we are in a position to deliver as a result of continued efficiency improvements and while still retaining appropriate financial resilience going forwards.

As our assurance statement confirms we have used sustainable rates for setting pay as you go (PAYG) and RCV run-off rates which ensure that there are no intergenerational cross-subsidies for customers. We consider that our business plan sets out an appropriate balance of risk and return that is in the interests of customers and stakeholders.

Our financeability has been tested against strong investment grade credit rating targets of Baa1/BBB+ from Moody's and Standard & Poor's (S&P).

The primary metrics are gearing and adjusted interest cover.

### Actual capital structure

Ratio	Average over 2020-25	Moody's, S&P BBB+ / Baa1 threshold
Gearing (Net Debt/RCV)	69.2%	<75%
Adjusted interest coverage ratio	1.6	>1.4x
FFO/Net Debt	8.7%	c.>9%

## Executive summary

### continued

#### Notional capital structure

Ratio	Average over 2020-25	Moody's, S&P BBB+ / Baa1 threshold
Gearing (Net Debt/RCV)	61.0%	<75%
Adjusted interest coverage ratio	1.6	>1.4x
FFO/Net Debt	9.9%	c.>9%

#### An assured plan

We have robust governance, assurance and risk management arrangements in place on an ongoing basis. These cover operations, planning and regulatory reporting, much of which is relevant for the work associated with developing this plan. For example, we have used a range of expert, best-fit assurance providers to cover all areas of the plan, and an independent assurance advisor has reviewed our assurance coverage.

In line with our usual approach to planning and reporting, our Board has been extensively engaged in developing our plan, both at a strategic level and in detailed scrutiny through the governance and assurance framework and through direct contact with customers at workshops and other events. The Board's assurance statement is included in Section 10.

More detailed scrutiny was undertaken by a subgroup, chaired by the Senior Independent Non-Executive Director (SINED), which included all of the INEDs, reporting regularly to the Board. INEDs attended Water Forum meetings and events, and have personally championed the customer participation and environmental aspects of our plan, leading and attending workshops with customers and stakeholders. The Chair of the Water Forum had access to and meetings with the entire Board throughout the preparation of the plan.

Since the beginning of the price review, the Board has followed its strategy to submit an exceptional business plan. The Board fully supports the plan and is now ready to take forward its implementation.

# 91%

of customers accept our plan

#### A plan shaped by the Water Forums

The independent Water Forums have provided invaluable inputs into our plan. We have been impressed with their commitment to the process and have benefited from their broad experience. They subjected our customer participation and engagement, and its impact on the plan, to rigorous challenge, using their expertise to cross-check our thinking and ensure that we were being bold. The Water Forums' detailed report and challenge log demonstrate the key areas of challenge and ultimate outcomes of these discussions.

This challenge brought benefits for customers and the environment. For example, the Water Forums shaped our Inclusivity Strategy, which encompasses our unique zero water poverty ambition, and helped us develop our proposals for taking brilliant partnership working even further.

**“ The company has genuinely welcomed our input and challenge throughout the process. ”**

**The Water Forums**

#### A plan endorsed by our customers

Our acceptability research and engagement allowed us to share our final, draft plan with a representative sample of household and non-household customers as well as with retailers and 'new appointment and variation' companies. We listened to their views and measured their level of acceptance of the plan.

We are delighted to have received excellent levels of customer support, with 91% acceptability for our plan. We attribute this extremely high level of support to the fact that the plan has been shaped by the views of more than 400,000 customers. We are confident that we have co-created a plan that meets the concerns, needs and aspirations of our customers.

**To conclude, our plan has been shaped and co-created through thousands of hours of conversations, scrutiny and debate with our customers, the independent Water Forums, partners, employees, our supply chain and other stakeholders. Their voices, concerns and aspirations are reflected throughout our collective plan.**

**The result is an ambitious, innovative and resilient plan that, taken as a package, will deliver exceptional service and lower bills for all of our customers. We are excited about bringing our plan to life with our customers and partners and we are confident – given our strong track record – that together we will deliver our plan.**

# 1.0

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# STATEMENT BY THE WATER FORUMS' CHAIR

The Northumbrian Water Forum and Essex & Suffolk Water Forum are our independent Customer Challenge Groups (CCGs). The Water Forums have been instrumental in shaping our plan.

## 1.0 Statement by the Water Forums' Chair

**We represent a wide range of people, organisations and sectors; from consumers to businesses, and from communities to industry regulators.**

Our work provides assurance to Ofwat, the industry regulator, that the company is taking its responsibilities to customers seriously: listening, understanding and acting accordingly. Our biggest role is to challenge the company as it develops its business plan every five years.

The Water Forums' independent report, required by Ofwat alongside the company's 2020-25 business plan, gives our honest commentary about the quality of the company's customer engagement, and how well the plan reflects and delivers on customer needs, expectations and priorities.

**A** The full report, which includes an executive summary, is provided as Appendix 1.2

To do the best possible job of challenging the company, we have dedicated a lot of time to developing a deeper understanding of how NWL plans and operates its business – from water and sewerage through to customer service and inclusivity. This has allowed us to get under the skin of how the company has engaged with customers and interpreted what it heard; and when it makes choices about future direction, we have looked closely at the issues surrounding those choices and challenged where necessary.

We have spent time with lots of members of NWL's team, including its Board, over the past three years – having regular meetings, workshops and discussions on all aspects of its business, emerging long-term strategy, and customer engagement.

We have been involved in more than 100 events and activities which range from active participation at the company's 2017 and 2018 Innovation Festivals, to observation of customer participation and co-creation in action.

Our independence, however, has been paramount and we were clear from the outset about our expectations as to how NWL should engage with us. This has allowed us to challenge them at all times, openly and robustly.

An account of our work can be found in our report which contains our 'challenge log', where we have kept track of our input and how the company reacted.

**“ When looking in the round at the business plan and its development, we believe the company has taken account of the views, needs and aspirations of customers, and this led to the very high levels of acceptability achieved. ”**

We believe that our report delivers a constructive and thorough analysis of the issues we have been tasked to examine, and we welcome any comments by email to [chair@waterforums.org.uk](mailto:chair@waterforums.org.uk).

**Jim Dixon**  
Independent Chair of the Northumbrian Water and Essex & Suffolk Water Forums

# 2.0

2.0 Co-creating our plan

2.1 How our customers have shaped the plan

2.2 How the independent Water Forums have shaped the plan

2.3 How our stakeholders have shaped the plan

# CO-CREATING OUR PLAN

Our plan has been shaped by the many thousands of interactions we have had with our customers, partners, employees and other stakeholders – from day-to-day conversations through to bespoke engagement around particular aspects of our plan.

This section explains how we have created a truly inclusive business plan.

## 2.0 Co-creating our plan

Key: ★ Raising the bar for the industry    ♦ Engagement and insight used to inform our plan

### SINCE 2015, 416,512 CUSTOMERS HAVE SHAPED OUR PLAN:



**69,249+** ★ ♦  
children take part in our education campaigns: Super Splash Heroes, Dwaine Pipe Panto and Powered by Water



**109** ★ ♦  
customers co-creating at our Innovation Festivals



**38,776** ♦  
customer journey assessments through our call centres



**229,377** ♦  
Rant & Rave feedback comments



**4,500** ★ ♦  
customers helped to shape our Assurance Plans in 2016 and 2017, resulting in self-assured status



**8,382** ★ ♦  
Every Drop Counts and Rainwise conversations on Flo



**14,578** ♦  
customers taking part in our tracking research



**24,299** ♦  
attendees at strategic research and engagement events



**248** ★ ♦  
Water Rangers and assistants protecting our rivers and coastal waters



**10,606** ♦  
customers helping to evaluate our campaigns



**14,886** ♦  
social media conversations



**1,502** ♦  
conversations on our Have Your Say forums

### WE ALSO ENGAGE OUR CUSTOMERS EACH YEAR THROUGH:



**91** ♦  
partner organisations attended our Thinking Ahead workshops to co-create our environment plan



**130** ★ ♦  
events attended by Flo, our community engagement vehicle



**4,388** ★ ♦  
customers received support and advice to help manage debt in 2017



**39.5m** ★ ♦  
reach of our award-winning campaigns in 2017



**3,000** ★ ♦  
customers engage with our customer heroes with a further 1m customers at events



**500+** ♦  
stakeholder organisations helped co-create our plan



**4,700** ★ ♦  
people co-creating ideas at our Innovation Festivals every year



**100** ♦  
customer and stakeholder events and meetings attended by Water Forum members during the PR19 process



**2,446,579** ♦  
conversations in our customer centres on average every year



**5.4m** ♦  
31,000+ followers and a 5.4m reach on Twitter



**52%** ♦  
of our people volunteer to support community projects



**1m** ♦  
5,525 Facebook followers, 130,000 engaged with our content, and a reach of 1m



# 2.1

## How our customers have shaped the plan

Customers are at the heart of everything we do and every decision we make. We have ensured that our customer engagement is leading both within the water industry and compared with other sectors. This section sets out our strategic approach to research, participation and engagement. It also explains how we have reconciled all of the evidence to inform our decisions, through the triangulation process.

### Ofwat IAP test areas

-  Engaging customers
-  Targeted controls, markets and innovation



**The company developed a strategy for research and engagement which has several notable strengths. It created a strong framework, with each decision about individual programmes of research taken in relation to the framework and placed engagement on a long-term footing. It benchmarked the company's approach to leading organisations beyond the sector.**

Professor Bernard Crump  
CCWater

### 2.1.1 Our strategic approach to customer engagement

#### Developing our approach

Customer engagement supports our short-, medium- and long-term business-as-usual decision making, over and above the price review cycles.

Throughout the development of our plan we have made sure that customers were able to tell us about the things that mattered most to them, in the ways they wanted to talk to us. We also ensured that our approach to research, participation and engagement would be leading both within the water industry and compared with other sectors.

To give ourselves the best foundation we carried out an extensive review of our approach during 2015.

This included:

- A full audit to identify all of the opportunities we have for engaging with customers;
- A review of the latest industry guidance from Ofwat, the Consumer Council for Water (CCWater) and others;
- A peer review exercise to identify best practice among other water and wastewater companies;
- Discussions with experts who have a deep understanding of customer engagement and, in particular, of behavioural economics;

- An exercise to explore how we could best use customer segmentation, again drawing on external expertise in the field;
- Best practice discussions and desk research into how leading organisations engage their customers. This included companies from a diverse range of telecommunications, retail and technological industries such as Sky, Lego, Dell, Amazon, First Direct and John Lewis; and
- Reviewing our proposed approach with members of the expert Water Forums who represent a broad range of people, organisations and sectors across all areas of our business plan.

We used the findings of this review as the basis of our strategic approach, and to inform a set of seven principles that we then applied to our research, participation and engagement programme.

Our review and the development of these principles, which align closely with Ofwat's principles of good customer engagement, put us in a strong position to push the boundaries beyond our achievements at the 2014 price review. This section summarises how we have applied our principles.

**50** We explain in detail throughout Section 3 how customers' views have shaped the plan

## 2.1.1 Our strategic approach to customer engagement

continued

### Our customer engagement principles

#### Principle 1: Empower customers

We genuinely want to empower our customers, and the proposals in our plan reflect the numerous ways in which customers have participated in co-creating and shaping services.

Our report 'From customer consultation to a culture of customer participation' (October 2017) sets out the journey we have been on to embed participation in all that we do ( [A](#) See Appendix 1.2). It also provided details of our future plans, including the ambitious goal to give every single customer the opportunity to have a strong voice and engage with us, with 2m customers participating by 2025.

**FIGURE 1: PRINCIPLES OF GOOD CUSTOMER ENGAGEMENT**

OUR PRINCIPLES	OFWAT'S PRINCIPLES
Empower customers.	Involve customers in service delivery.
Be led by our people.	Ensure a two-way and transparent dialogue.
Continuous and on-going.	Engage customers as a continual and ongoing process.
Have a deep understanding of customers.	Understand the needs and requirements of different customers.
Be creative and innovative.	Use a robust, balanced and proportionate evidence base.
Use multiple sources.	Engage on longer term issues, including resilience.
Provide regular feedback to customers.	Set the context through the use of comparative information.

We have also drawn on the 'Futures, Action, Community and Experience' (FACE) framework, which Corporate Culture developed for Ofwat, to inform our participation approach. This was set out in Ofwat's 'Tapped in' report (March 2017). Examples of our 'Futures' initiatives are our annual Innovation Festivals; our 'Action' initiatives are our Water Rangers and Love Your Drain programmes; our 'Community' initiatives are our employee volunteering and 'whole town approach' to behavioural change campaigns on water efficiency and blockages; and our 'Experience' initiatives are our plans for Innovation Street and smart water metering. Further examples are embedded within this plan, alongside ideas for future development.

**53** We provide more information about our customer participation strategy and our plans for the future in Section 3.1

#### Ofwat IAP test areas

- EC Engaging customers
- CMI Targeted controls, markets and innovation

2m

customers participating by 2025

## 2.1.1 Our strategic approach to customer engagement continued

### Principle 2: Be led by our people

Our engagement with customers is led by our people, rather than by third party research agencies. This engagement takes many forms: co-creation events, design sprints and workshops, our online Have Your Say forums, social media and the thousands of conversations we have with customers who call our contact centres every year.

We create opportunities for our people to engage with customers in their own communities, including through our mobile engagement vehicle, 'Flo'. Flo visits a wide range of communities across our regions, from urban inner cities to quieter rural and coastal towns. The vehicle has been a feature at many high-profile events, including the Tour of Britain, Asian Cultural Mela Festival, Northern Pride and the Great North Run. 94% of our customers who have engaged with us on Flo agree or strongly agree that this is a good way for us to communicate with our customers.

Our Board members are very active, attending customer events, stakeholder workshops and our Innovation Festivals. One of the ways in which we have formalised our Board engagement has been through Board members championing particular interests and perspectives. For example Margaret Fay CBE DL has been particularly active in speaking to customers at our customer research and engagement events, then updating the Board on the range of research we have undertaken and the insights emerging from this.

Our Executive Leadership Team (ELT) and senior managers meet our customers face-to-face on a regular basis too, which is something our customers are particularly responsive to.

**“Honestly (feel) quite privileged because it shows that the big organisations such as Essex & Suffolk Water do not just come up with the ideas themselves, that they do consider the consumer as well.”**

**ESW customer**  
Tariff Structures Research, 2018

Customers also attended our November 2017 Leadership Conference, with our 80 most senior managers, where through co-creation activities customers shared with us how they would like our business plan to look and feel.

#### Ofwat IAP test areas

- EC** Engaging customers
- CMI** Targeted controls, markets and innovation

**94%**

of customers agree that Flo is a good way to engage

### Board engagement with future customers



**Direct engagement with customers gives our Board members invaluable insights that enable them to better represent our customers' views.**

A great example of Board members talking directly to customers happened with some of our younger customers on board Flo. Dr Simon Lyster held a series of small discussion groups with them to explore what our outcome 'we help to improve the quality of rivers and coastal waters for the benefit of people, the environment and wildlife' meant to them. Their feedback was used, alongside other insights, to shape our ambitions to protect and improve the environment beyond our regulatory obligations.

He said; "The company's attitude to customer participation is at the leading edge... listening to customers and what they think we should do is absolutely crucial. Customers have told us that they want to stay engaged and we'll continue to do that; it is part of our DNA and it is something we will continue to do forever."

### Principle 3: Continuous and on-going

Customer engagement is part of what we do every day, not something we focus on at price reviews alone.

We use customer insights on a daily basis to enhance the customer experience. Our customer insights team use specialist tools and business information systems to analyse and interpret our daily interactions and operational data. They also analyse other data, such as tracking research and SIM survey results. This yields rich insights and identifies trends that are used to develop improvement proposals for our processes and services, and pinpoint areas for investment.

## 2.1.1 Our strategic approach to customer engagement

continued

### Principle 4: Have a deep understanding of customers

We appreciate that the majority of customers have a low interest in, or understanding of, the water and wastewater industry. They have busy lives, and our activities may not be at the front of their minds. It is therefore our responsibility to create engagement opportunities that motivate the unengaged majority to participate.

As well as using multiple methods of engagement we seek to understand our customers' interests and motivations for engaging with us.

To explore attitudes and behaviours, we go beyond traditional segmentation approaches such as socio-economic grouping or age. For example, when we talked about coastal water quality, we engaged with customers who did not visit beaches, as well as those who did visit them and those who walked along the beach or swam in the sea.

Another technique we use is to develop customer pen portraits and 'journeys', which help us improve our service channels and the ways in which we communicate. A pen portrait delves further than traditional Acorn profiling, enabling us to consider attitudes and lifestyle by putting ourselves in our customers' shoes. This work is 'story driven', with a focus on what we can do to make dealing with us easy, personal and positive for customers.

Throughout all of our customer engagement, we make sure that we understand what matters most to customers who may need additional help and support, and how that need might manifest itself. Our Inclusivity Strategy sets out our plans to make our services inclusive for all of our customers.

**78** See Section 3.2

It is important that we have a deep understanding of our future customers too, and through our education programmes we engage with young people from ages 5 to 19. Finally, we explore intergenerational equity with all our customers to understand what is considered fair in the short, medium and longer term.

### Principle 5: Be creative and innovative

We use creative, innovative and accessible approaches because this stimulates easy discussion and allows customers to express themselves in ways that they would perhaps not otherwise do. It also helps us to reach customers who may not usually choose to get involved with more traditional forms of engagement.

To make our engagement more accessible for customers, we look at a range of different methods. For example, we might run an online survey in parallel with face-to-face interviews. We also use Flo, our mobile customer engagement vehicle, to reach out to customers on their own turf.

Some simple examples of where we have made engagement more interactive and interesting are where we have asked customers to create team posters, to develop prototypes using Lego, and to take part in live voting. Another creative approach was to use a court room scenario, where we put our company on trial for a hypothetical breach of trust in order to explore notions of trust in greater depth.

#### Ofwat IAP test areas

- Engaging customers
- Targeted controls, markets and innovation



Exploring inter-generational equity with all customers to understand what is fair.

### Using conundrums to engage our customers

**We're always looking for creative and different ways to engage with our customers.**

To better understand customer behaviour, and improve the way we operate, we hid some 'conundrums' inside fortune cookies and invited customers and stakeholders to tell us how they would solve them while enjoying the cookies.

**Conundrum: Customers want us to keep them informed through leaflets with their bill, but then tell us they often don't read them.**

Suggestions of how we could address this included making sure information was succinct and clear, and some ideas for new, digitally focused ways of communicating with customers.

**Conundrum: Price + Service + Provider Choice = Good value for money. But our customers can't choose their provider.**

Customers told us value for money perceptions could be improved by more communication on reliability, quality of water and comparative information on other water and sewerage companies. It was also suggested that service is the key differentiator so we need to make sure we are easy to do business with.

We shared this approach with our peers at the Market Research Society's (MRS) Utilities Conference in 2017 and they agreed it was an innovative and really informal and fun way to engage.

## 2.1.1 Our strategic approach to customer engagement continued

### Principle 6: Use multiple sources

In developing our plan we have made sure that we used all of the qualitative and quantitative information in a detailed and balanced way. This process, called 'triangulation', was about developing a deep and broad understanding of our customers' needs and expectations from multiple standpoints.

#### Our innovative approach

Our triangulation framework was developed specifically for PR19. Our approach will become business as usual in that we will apply our triangulation framework to all customer research, engagement and participation going forwards.

For PR19 business planning we developed a specific three-phase plan that included formal points where we triangulated our customer insights.

We worked with the Water Forums to develop our approach, presenting early drafts to members and taking constructive challenge from them. We also took into account Ofwat's methodology, 'Delivering Water 2020' (2017), and CCWater's paper 'Defining and applying triangulation in the water sector' (2017).

We paid particular attention to how we would triangulate evidence at our phases two and three triangulation points. Figure 2, overleaf, summarises our three-phased approach.

**A** See Appendix 2.1

#### The benefits of our approach

Our triangulation approach provided us with a strong understanding of what matters most to customers. Our decision-making has drawn on all available sources of insight, and has represented them in a proportionate way. As a result our plan is founded on a complete understanding of our customers' priorities.

Our approach provided transparency for the Water Forums, allowing them to engage with our full body of customer research and engagement. This, in turn, allowed the Water Forums to provide challenge and assurance.

#### Ofwat IAP test areas

- EC** Engaging customers
- CMI** Targeted controls, markets and innovation

# 400k

The views of 416,512 customers shaped our plan

### Principle 7: Provide regular feedback to customers

The final element of our strategic approach is to highlight to customers how their views have made a difference to decision making. We provide summaries to customers who want them after engagement projects.

We also invite customers who have participated to keep the conversation going by joining our Have Your Say forums or by signing up to be contacted about future research.

We always make sure that when we interpret research and technical data we present this in ways that are engaging, informative and in line with the ways in which customers want to receive the information.

### Our customers' engagement journey

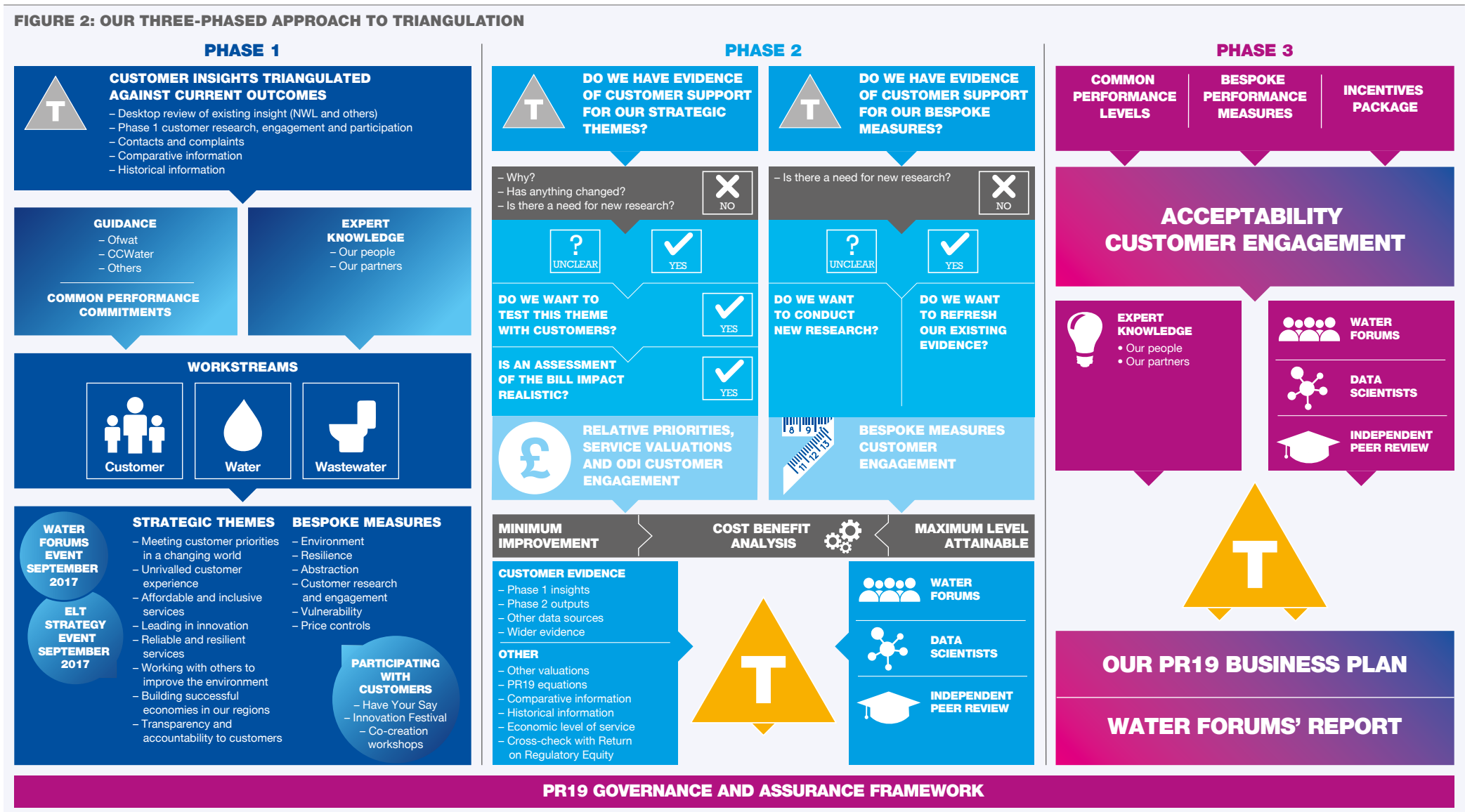
An important early milestone of our PR19 customer research, participation and engagement journey was our 2016 Defining the Conversation research where we asked our customers to tell us which areas of services they most wanted to influence. Since this early research we have gone on an extensive journey to understand the views of more than 400,000 customers and to use these views to shape our plan.

The final point of our PR19 journey was our 2018 Acceptability Research. We used these final workshops to close the loop by re-engaging participants from our original Defining the Conversation research. This allowed us to share with these customers how their views had shaped our plan and to hear their thoughts on our final offering.

"I think it's a good idea for customers to participate, otherwise Essex & Suffolk Water don't know. Feedback is the best way" (Great Yarmouth, 35-54, C2DE).

We are already looking at how we can improve for PR24. From a design sprint at our 2018 Innovation Festival we have begun to create a customer engagement model that will help us achieve our ambitious goal of giving every single customer the opportunity to have a strong voice and engage with us.

## 2.1.1 Our strategic approach to customer engagement continued



## 2.1.2 Our customer research, participation and engagement

Having outlined our strategic approach, this section provides more information about the research, participation and engagement activities that have shaped our plan. Some activities have taken place specifically because of the PR19 business planning process. However, most of our customer insights come from our day-to-day activities. This aligns with our principle that customer engagement should be an ongoing activity, not driven by price reviews.

Our activities are grouped as:

- Continuous and ongoing insights;
- PR19 specific insights;
- PR19 economic research and engagement;
- PR19 acceptability research and engagement; and
- Additional engagement.

### Ofwat IAP test areas

- EC** Engaging customers
- CMI** Targeted controls, markets and innovation

**6,000**

Tracking research engages with more than 6,000 customers and stakeholders each year

### Continuous and ongoing insights

#### Tracking research and campaign evaluation

We carry out continuous customer research to understand trends in satisfaction, monitor the success of campaigns and understand service priorities. This includes our quarterly domestic tracking survey, our annual SME (small and medium sized enterprises) tracking survey and the research we conduct to support campaign monitoring and evaluation.

Our tracking research engages with more than 6,000 household and non-household customers and stakeholders each year. This research measures our customers' perceptions of service, satisfaction with value for money, experience of our campaigns as well as general 'brand' perceptions.

Our tracking research helps us to understand our performance from our customers' perspectives and to respond to any changes in satisfaction by looking into these further and making improvements. The results contribute towards policy development and business planning.

### Policy and strategy engagement

We carry out a programme of bespoke activity around strategic aspects of service, including operational service, inclusivity, charges and the future.

We determine an overall programme of work at the beginning of each price review cycle, review it each year in line with emerging requirements and build in the flexibility we need to respond rapidly if new needs are identified. The outcomes are used to inform the policies and strategies that underpin our business plan.

Our policy and strategy engagement programme is summarised in Figure 3 overleaf.

We customise our approach to each project to make sure that it fits with our seven principles for good customer engagement. As good practice, we make sure that we gather customers' uninformed views before we then talk to them in more detail about the subject. Once these customers have gained a deeper understanding of the matter we then seek their informed views.

- 50** The ways in which individual projects have shaped our plan are discussed in Section 3
- A** The executive summaries from all of our individual projects can be found in Appendix 2.2

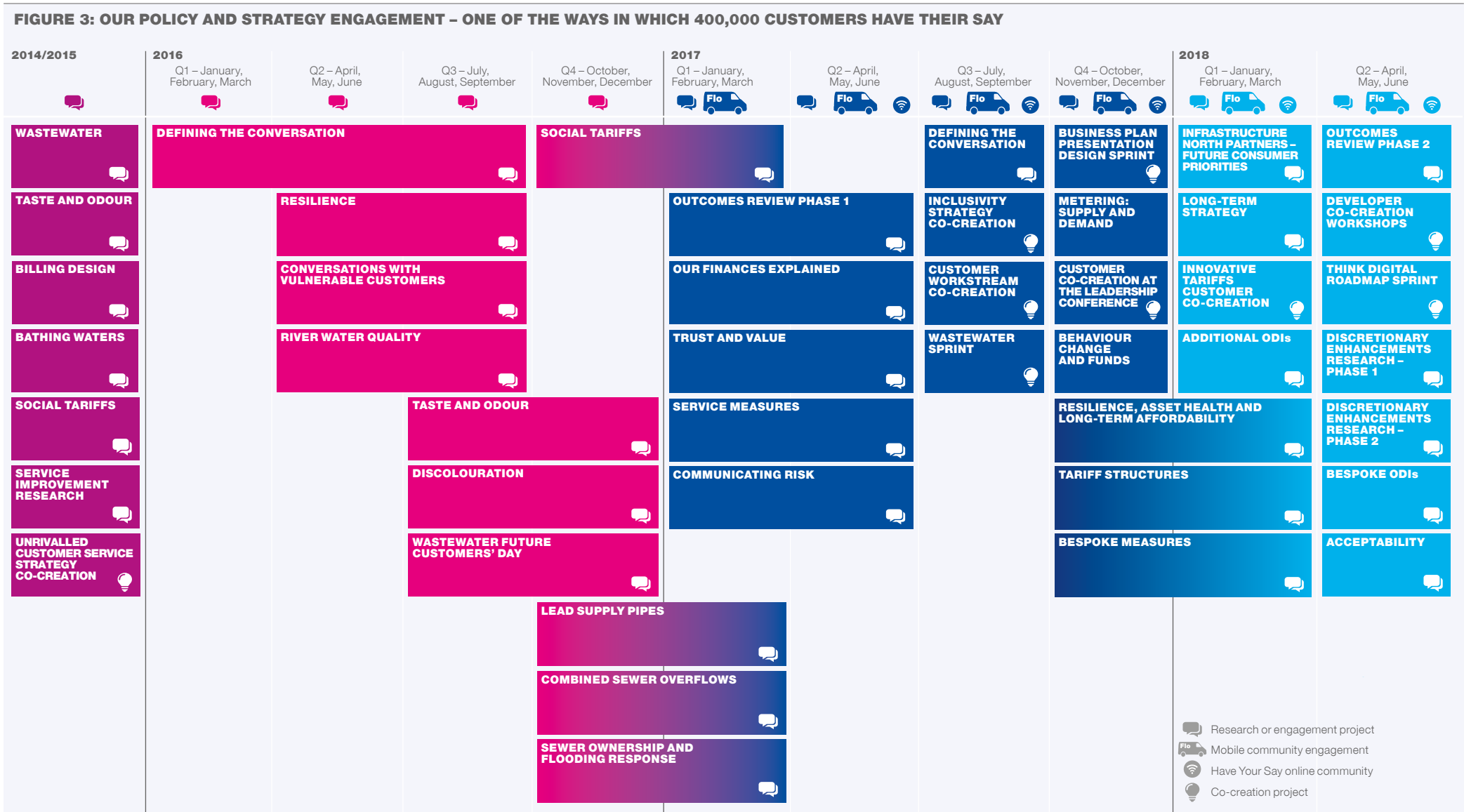
### Other insights

We actively look beyond our own research and engagement findings for customer insights. This includes considering research and engagement reports published by other companies and organisations. In particular we pay close attention to the work of CCWater, Ofwat and the sector. More widely, we pay attention to reports published by government bodies, the Office for National Statistics, the Institute of Customer Services (ICS), academic institutions, charities, market research agencies and others. We also track non-governmental organisations' campaigns.

Our daily interactions with customers, combined with operational data, generates vast amounts of information. Our customer insights team 'mine' this data along with other sources of information to yield rich insights. This links to digital innovation and our digital vision.

We also track social media, both linked to ourselves, other water and wastewater companies and our stakeholders. This provides valuable customer insights that are used to shape the services we provide.

## 2.1.2 Our customer research, participation and engagement continued





## 2.1.2 Our customer research, participation and engagement

continued

### PR19 specific insights

#### Our Have Your Say online communities

Have Your Say includes more than 500 members, around one-third of whom consider themselves to need additional help and support. Customers interact with us and with each other, sharing ideas and experiences and taking part in surveys and polls.

Members own the forums and can initiate conversations on the issues they are most interested in. This channel has allowed us to engage easily and quickly with customers as we developed our plan. We will continue to use the online community as a means to engage with customers beyond PR19 business planning.

### Customer research and engagement to support the business plan

We have carried out a number of bespoke projects to co-create and validate specific elements of our plan with customers. These activities are summarised below.

**50** We draw out the impacts of this engagement in Section 3

#### Defining the conversation

Here we explored what mattered most to our customers about our service in their homes, their communities and in the environment. We also talked to customers about our outcomes and the areas of service they most wanted to influence in our plan.

Customers told us that they trusted us to know what good service was and trusted us to deliver excellent service. This has shaped our ambitions to deliver upper quartile performance, wherever possible. This means that we set our ambitions so that we are in the top quarter in the industry when we compare our performance to others. It also informed the decision – when undertaking our service valuation engagement – to ask our customers how much they valued our company becoming the best.

#### Ofwat IAP test areas

- Engaging customers
- Targeted controls, markets and innovation

**500+**

Our online community, Have Your Say, has 500+ members, around 1/3 need additional support

Customers told us that we should engage with other expert organisations when considering how to protect and improve rivers and coastal waters. This has helped to shape our environmental ambitions, and the activities we are planning with our catchment partners.

Customers also told us that we should engage with them to understand their views on customer service, value for money and trust. We co-created our Unrivalled Customer Experience Strategy (2015) with customers and used this as a framework to embed customer participation throughout all of our activities. We included a specific engagement project about trust and value in our PR19 engagement programme.

#### Trust and value for money

We wanted to understand what forms and drives our customers' perceptions of trust and value for money.

We know that when our customers think about what value for money means they compare us to the other essential services they spend their money on. When they think about water in comparison with their weekly supermarket shop, childcare, council tax or other utilities many customers tell us we offer very good value for money.

Customers told us that we are a company they trust, and that trust is something that is built up over time.

Their perceptions of value for money and trust can be lowered by service failures. Our plan responds to this by putting in place measures to mitigate the risk of a loss of trust in the event of a service failure.

#### Resilience

The first of our four resilience engagement projects was to understand our customers' views on resilience (Resilience, 2016).

Our customers mainly saw resilience in terms of bouncing back or strength. They accepted that there would always be an underlying risk of major service failures and said that they trusted us to be prepared and to respond quickly in the event of a major failure. Customers struggled to quantify 'risk'; this insight led us to undertake additional engagement to help us understand how best to communicate 'risk'.

During our Communicating Risk (2017) engagement, customers helped us understand how to present risk and probability to them. Through that project, our customers helped us design our engagement around Resilience, Asset Health and Long-term Affordability (2017) so that it would be understandable to them.

## 2.1.2 Our customer research, participation and engagement **continued**

We explored intergenerational fairness in relation to asset health. Our customers confirmed their preference for flat, stable and manageable bills over time, as many people on low incomes cannot absorb unexpected price changes (Resilience, Asset Health and Long-term Affordability, 2017). This preference is reflected in the bill profile within our plan.

We also explored asset health and how resilient customers thought our assets should be (for example the acceptable risk of asset failure). Customers' views determined which enhancements for resilience we should include in our plan. These were then tested again with customers in our Discretionary Enhancements Acceptability Research (2018).

### Discretionary Enhancements Acceptability Research

In March and April 2018, we conducted two phases of deliberative qualitative research with our customers to explore their acceptability for a range of enhancement schemes. These schemes were considered to be cost-beneficial and to address some of the biggest risks we had identified:

- Improving how we can move water around our regions to reduce the chance of customers' water supplies being interrupted;
- Offering our customers smart water meters;
- Removing lead pipes to reduce the risk of harm to our customers;
- Reducing the risk of flooding from sewers;
- Making part of our wastewater network smart; and
- Improving cyber security.

We presented the schemes to customers within the context that they would reduce risk of service failure, but were not essential to core service delivery over the next five years, and as such could not be delivered within base charges. Participants were told that in 2020 customers' bills would be reduced by 10% and that all of the schemes could be funded if they agreed to take a smaller reduction.

Our customers who participated in the research received a presentation on each scheme, which was delivered by one of our experts. They were then given the opportunity to ask any questions before voting on whether or not they accepted each scheme. We received generally high levels for all of the schemes and overall packages of investment, with the exception of smart water meters.

We reviewed the results of the engagement with the Water Forums who welcomed the generally high levels of customer support for the schemes.

### Service measures (2017)

We wanted to understand our customers' prioritisation of service improvements, relative to one another. With this information we could then start thinking about which service improvements we should include in our plan and the scale and ambition of improvements.

Our customers' views have shaped our plans for improvement, in particular in relation to our ambitious plans to reduce leakage.

We also explored customers' views on how we measure and report performance and their perception of us when we provide comparative information.

Our customers told us they judge performance on value for money, the quality of our product, and customer service. Our plan aligns with this in terms of lower bills and improved service.

#### Ofwat IAP test areas

-  Engaging customers
-  Targeted controls, markets and innovation

  
**Our customers supported all of our ambitious goals.**

### Bespoke measures of success

We used our understanding of our customers' views to help us develop our bespoke measures of success (MoS). We then engaged with customers to make sure that we had the right package of bespoke measures.

### Outcomes research

We wanted to know whether customers understood our outcomes and whether we could make improvements to them. We explored customers' understanding of the language that we used and, based on our findings, then redrafted the outcomes (Outcomes Phase 1, 2017). We then took the revised outcomes back out to customers to make sure that they were clearly understood (Outcomes Phase 2, 2018).

The outcomes that we use in the plan reflect the language preferences of our customers.

### Our long-term strategy

We wanted to make sure that our customers supported our long-term strategy and our ambitious goals. We held deliberative workshops with customers and future customers to explore this. After discussing each of the ambitions, participants were asked to vote on whether they supported them or not. All of the ambitions were positively supported.

## 2.1.2 Our customer research, participation and engagement

continued

### PR19 Economic research and engagement

#### Service valuation research

##### Our innovative approach

We wanted to make sure that our service valuation research would be innovative, pushing the boundaries of economic research beyond conventional willingness to pay (WTP). As a result we created an experience for participants that was interactive, appealing, easy to understand and personalised while also producing cognitively robust results.

We worked with our expert partners (Frontier Economics, Explain Market Research and Supercharge) to develop an interactive tool. Frontier Economics ensured that we would get robust ranges of customers' service valuations and appetites for Outcome Delivery Incentives (ODIs) from this. Their report describes this process and validates that not only was it innovative, but that it was also unique in the way that it used customers' real bill data to test their valuations.

**A** See Appendix 2.3 for more detail from Frontier Economics

We achieved two ranges of valuations from a representative sample of our customers:

- The value that customers place on improving core aspects of the services we provide; and
- Customers' appetites for ODIs and insight into why they think we should strive to become the best.

##### Our customer friendly approach

To make the experience simple and relevant, we framed the choices participants were asked to make in the context of their own bill. We produced multiple versions of the tool so that it was relevant to customers in our different operating areas. We also developed a bespoke version for non-household customers that focused solely on wholesale service charges.

We tested the tool's usability and cognitive validity with two pilot groups of participants. To make sure that everyone would understand the tool we tested it with children.

Our market research partner, Explain Market Research, conducted our formal fieldwork holding 18 Hall Tests across our operating areas to engage with a representative sample of 1,600 of our household customers. To complement the formal fieldwork, we engaged with an additional 3,000 customers online or by reaching out to customers in smaller towns through our community vehicle. In addition, 144 non-household customers took part using the bespoke version of the tool.

#### Ofwat IAP test areas

- Engaging customers
- Targeted controls, markets and innovation



**Our interactive tool used customers' real bill data.**

#### Service improvements

For the service improvement exercise, we explained that we were committed to reducing customers' bills in the future, and that we would find new ways to deliver a better quality of service at a lower price. We asked customers for their views on which services we should focus on improving, promising that we would deliver the improved services without increasing their own bill. Customers used a slider tool to allocate a pre-defined percentage of their bill across different core aspects of services.

Simple wording was used for the instructions on how to complete the activity, each service area was succinctly described, and we used animated sliders to help customers understand the relative relationship between improvements and costs as they moved the sliders up and down. For example "£1.31 could reduce the number of flooding incidents that occur inside properties to 276 per year".

All service improvement options were displayed side-by-side on one screen, so that participants could compare the decisions they were making.

The results from this exercise provided customers' relative preferences and how they would prioritise the amount of money they already pay. The monetary amounts shown on the sliders were related to real costs of service improvement so the results show where customers value service levels at least as much as the cost of providing them.

#### Becoming the best

The ODI element of the tool explained that if we deliver the best level of service in comparison to other water and sewerage companies in England and Wales, then we could gain a financial reward, which all of our customers would pay for. It also explained that if we delivered poor levels of service, we could face a financial penalty, which would mean we would refund all of our customers a proportion of their bills.

We reminded customers that we were committed to reducing their bills and asked them how much of that saving they would be willing to reward us if we delivered the best levels of service in England and Wales. They were asked to allocate the reward against different service areas depending on how much they valued the best level of service in those areas.

## 2.1.2 Our customer research, participation and engagement continued

It was important to us that we provided customers with the opportunity to provide their views on ODIs, including having the opportunity to say they would prefer zero rewards.

To address this challenge directly, we designed the tool to include two distinct activities:

1. Customers were presented with a fixed amount of money to allocate across the service areas; and
2. Customers were asked how much they would be prepared to pay in total for rewards, and then to allocate that amount of money across the service areas. There was a ceiling of 10% of their bill in relation to the amount customers could allocate.

The part of the activity that participants saw first was randomised. This allowed us to explore whether the ordering of the two parts affected customers' choices.

By presenting the choice in terms of how much customers would value the best level of service in England and Wales, we were asking participants to consider something that was simpler for them to relate to. It also provided context in terms of our performance and that of other water and wastewater companies.

### Frontier Economics said:

“The overall challenge when designing research for PR19 is that customers pay low attention to water services and have little experience of service disruptions, so results for detailed, traditional WTP surveys generally have lower cognitive validity. Customers are more comfortable considering simpler more qualitative comparisons, however, in order to get the details and insights that water companies need for regulatory business planning, there is a limit to how much you can simplify the research.”

“We worked with NWL to directly address this challenge in the way that we designed the core PR19 research:

- The performance commitment research is simpler than classic WTP surveys. This is because it was developed with one prioritisation task framed in the context of the impact on customers' bills and the cost of delivering service improvements. This strikes a good balance in addressing the overall research challenge, as it delivers NWG with customer valuations that can be used to directly inform its cost benefit analysis (even if the valuations are not maximum WTP values) and delivers results that have a higher cognitive validity (as the research is simpler because it only includes one choice question); and

- We also recognised the importance of having valuations specifically relating to ODIs for PR19 and designed specific ODIs research. Our design of having one question that was constrained by a certain monetary amount, and one that was unconstrained is an innovative approach. One advantage of this approach was the balance between offering customers genuine choice (ie we included the option of no rewards in the unconstrained approach) and ensuring that NWL collected useful insights for its business plan.”

### Ofwat IAP test areas

- EC Engaging customers
- CMI Targeted controls, markets and innovation

Following the research, we were interested to understand whether customers would have allocated even more than 10% of their bill to ODIs. We contacted participants of the original research and asked them. More than 1,000 customers responded.

### Bespoke measures

We carried out separate engagement to gain valuations for our bespoke measures.

This took place in five locations, across our operating areas, in the form of interactive Hall Tests. Five hundred household customers participated. We also conducted an online survey with 120 non-household customers, asking them to consider the wholesale portion of their charges in relation to ODIs.

Participants were first shown a video where we set the scene around our PR19 customer engagement, the 10% potential bill reduction, and our plan development. We then introduced potential areas for rewards and penalties. These were around asset health, repeat sewer flooding and flood risk reduction (NW only), the environment and interruptions to water supply lasting 12 hours or more.

## 2.1.2 Our customer research, participation and engagement

continued

The video explained that some potential rewards had already been decided by other customers – the common measures tested as part of our service valuation research. For context these amounts were shared with participants, but it was made clear that they would not be able to influence or alter those amounts in any way.

Participants were then taken to an individual table, with a board showing the potential areas for ODIs. They were asked to allocate some plastic coins to the measures they felt we should receive a reward for if we became the best company for delivering that service. It was made clear to participants that they could allocate as much or as little as they liked (including nothing) to each measure.

Our researchers were on hand to offer support and to give participants a gentle reminder that they could continue to allocate coins beyond the 10% potential saving if they wanted to.

This approach allowed us to gather bespoke measures valuations that stand up alongside those from our service valuation tool in a way that is robust.

**184** The results from our service valuation engagement can be found in Section 4

### Ofwat IAP test areas

- EC** Engaging customers
- CMI** Targeted controls, markets and innovation

### PR19 acceptability research and engagement

#### Our approach

Our innovative approach to acceptability research consisted of quantitative engagement, focused on gaining feedback from a statistically significant sample of customers, along with qualitative engagement which allowed us to explore our plan 2020-25 in more detail.

**A** See Appendix 2.4

The aspects of our plan that were tested with customers were:

- Service levels;
- ODI penalties and rewards;
- Discretionary enhancements (eg resilience); and
- The bill profile.

Two additional aspects of the bill context that we included were the potential impact of inflation and the potential for an uplift in bills due to rewards gained from ODIs between 2015 and 2020.

In our ESW operating area, we included information on wastewater bills for our water customers who receive their wastewater services from Anglian Water or Thames Water. This information was based on the information that was made available to us from those companies at the time. Thames Water has since provided a reducing bill profile, meaning that the bill profile we tested with our customers was not as good as it will actually now be (according to the most recent information we have).

#### Quantitative engagement

For our quantitative research we engaged with a representative sample of customers through a combination of telephone interviews, an online panel and face-to-face interviews. This was supplemented using Flo, our customer engagement vehicle, which visited 14 locations over a three week period.

As part of this research all 2,808 participants were provided with comparative bill information and asked to respond to a single killer question.

### COMPARATIVE INFORMATION PROVIDED

Northumbrian Water supply your water and wastewater services. Currently the average customer's bill is just above average compared to all water and wastewater bills in England and Wales.

Essex & Suffolk Water supply your water services. Currently the average customer's bill is the highest compared to all water bills in England and Wales.

### THE KILLER QUESTION

In Northumbrian Water's/Essex & Suffolk Water's plan, they will make improvements to the services you receive between 2020 and 2025, and will also reduce the risk of more serious problems happening in the future.

The plan is built on what customers have already said is important to them and will be delivered for a lower bill than you pay today.

On the basis of this information do you accept Northumbrian Water's/Essex & Suffolk Water's plan?

Please select one option:

- Yes, I accept the plan
- No, I don't accept the plan
- I would like more information before I make my decision

### THE RESULT

91% of customers accepted our plan.

## 2.1.2 Our customer research, participation and engagement

continued

Participants who said that they would like more information before making a decision were sent a copy of our brochure, Our Plan 2020-25.

Separate versions of the brochure were made for each operating area and provided customers with information on:

- Who we are and what we do;
- How customers have shaped our plan;
- How customers' bills will change;
- How customers' money is spent now and how it will be spent in 2020-25;
- Rewards and penalties, and how they could change the 2020-25 bill;
- Inflation and other considerations (including Anglian Water's and Thames Water's proposed wastewater bills in our ESW operating area); and
- What our plan includes – unrivalled customer experience, affordable and inclusive services, reliable and resilient services, leading in innovation, improving the environment, and building successful economies in our regions.

Where appropriate, information included what we plan to do, how we will measure our success, and how we perform comparatively within the industry.

**A** The NW and ESW customer versions of these brochures can be found in Appendix 2.5

### Non-household (wholesale) customers

We completed telephone interviews with businesses that have premises in our operating areas. We explained that it was important for us to engage with them because the businesses, charities and public sector organisations that receive our wholesale water and/or wastewater services are still customers.

We produced bespoke versions of Our Plan 2020-25 explaining how wholesale charges would change. The wholesale brochures covered all of the information contained in the customer versions.

Wholesale customers were asked to respond to our killer question relating to their wholesale charges.

Our local CBI and Chamber of Commerce partners also emailed their members Our Plan 2020-25, along with a link to an online survey asking our killer question.

### Retailers and NAVs

We wrote to all of the retailers and new appointments and variations (NAV) in our supply areas and invited them to take part in a telephone interview. This was to understand if our plan was acceptable. A bespoke version of Our Plan 2020-25 was produced which covered both of our operating areas and contained all of the information from the customer versions. We also considered the views and issues expressed to us as part of our regular service provision discussions with retailers and NAVs.

#### Ofwat IAP test areas

- Engaging customers
- Targeted controls, markets and innovation

### Qualitative engagement

To support the quantitative research and to gather some deeper insight into our customers' views we held six deliberative workshops, with 177 customers attending these events. This was an innovative approach to acceptability engagement as it allowed us to give customers details about our plan and to explore the reasons behind their acceptance in a direct way.

We invited some customers who had attended earlier engagement events, such as Defining the Conversation, one of our first customer engagement projects in our PR19 journey.

This enabled us to share with those customers the story of that journey, starting with what they had told us and how we had used this as a starting point to shape our plan. This is a good example of closing the loop and allowing customers to see how more than 400,000 customers have participated in creating our business plan.

## 2.1.2 Our customer research, participation and engagement continued

At the start of each event, we put our killer question to customers.

Next they were shown an introductory video from our CEO, Heidi Mottram, outlining who we are and the business planning process. Attendees were then taken through our plan and given lots of opportunities to ask questions.

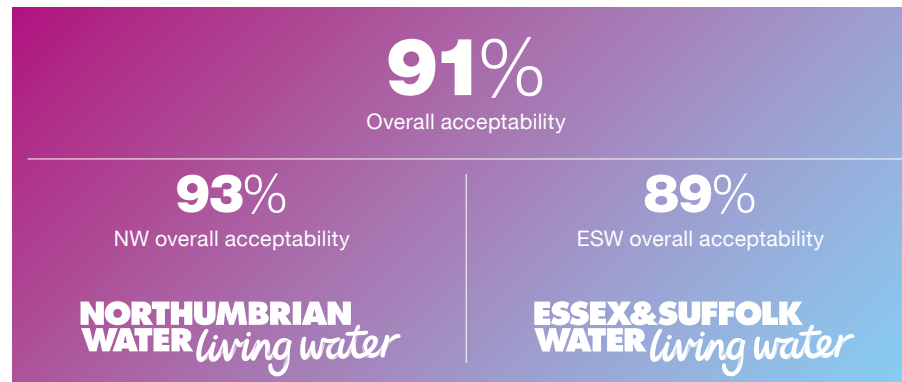
The events were chaired by Explain Market Research, so that they were independent. Our Strategic Research and Assurance Manager, and Customer Research Manager attended every event to make sure that any questions participants asked were answered accurately and consistently. Members of our Executive Leadership Team, INEDs and Water Forum members also attended the events.

At the end of each event, customers were asked the killer question again. This approach allowed us to see how the information contained in our plan changed customers' responses and allowed us to explore the reasons why.

### Ofwat IAP test areas

-  Engaging customers
-  Targeted controls, markets and innovation

**“**  
**We received excellent levels of customer support for our plan.**



### Acceptability results

Our acceptability engagement provided almost 3,000 household and non-household (wholesale) customers, as well as retailers and NAV companies, the opportunity to tell us if they accepted our plan.

We received excellent levels of customer support for our plan, which we attribute to the fact that it has been shaped by the views of more than 400,000 customers, as well as by other stakeholders.

Our acceptability engagement has been quantitative and qualitative. The results of each of those strands are discussed in this section.

This acceptability was based on a 10% reduction (before inflation) to our customers' bills in 2020 – our conservative and best forecast when we designed our acceptability engagement.

Since completing our acceptability research and engagement, we have re-run our financial models. The reduction we will see by 2024/25 is 14% for our water customers and 17% for our wastewater customers. There will be a significant initial reduction of 12.6% and 12.6% respectively in the first year with further reductions throughout the period. All figures exclude inflation.

This is important to note, as the bills that we tested with customers during acceptability engagement were higher than the actual final modelled numbers. Our acceptability results may have been even better had we used our final numbers.

We were extremely pleased to achieve 91% acceptability for our plan.

### An inclusive, unrivalled service for all

**Our vision is to provide an inclusive, unrivalled service for all of our customers. Eradicating water poverty is our industry leading aspiration and involving customers in the development of services is key to understanding their expectations and requirements.**

Never is this more so than for our customers who need additional help and support, as they may experience barriers that prevent them from communicating with us or means that they do not receive the same level of service as other customers.

At interactive workshops we asked customers, who were themselves in need of additional support, to explain to us what unrivalled customer service looked and felt like. We then checked this against what we already provided. The sessions took place with defined groups of customers in different circumstances and also involved representatives of the partner organisations who are often our key link with customers.

These sessions provided clear key messages, which we then used as the basis for our Inclusivity Strategy (see Section 3.2). By working in partnership with financial, health and community support organisations to share data, our innovative approach will provide smart new ways to help our customers.

## 2.1.2 Our customer research, participation and engagement continued



### Quantitative engagement

We were delighted that in our quantitative engagement we achieved 90% acceptability for our plan from our household customers.

This includes customers who required further information before making their decision. The relevant copy of Our Plan 2020-25 was sent to them and they were contacted again by telephone to ask them whether the plan was acceptable.

### Household customers' acceptability

Acceptance was higher among customers in our NW operating area than in our ESW operating area. This was predominately due to the fact that more customers wanted additional information before they made a decision. We were unable to get definite answers from a number of customers (7% NW and 10% ESW), so continue to report them as wanting more information.

### Ofwat IAP test areas

- EC** Engaging customers
- CMI** Targeted controls, markets and innovation



We have studied the results of our acceptability engagement, to see if the acceptability level from customers who may need additional help and support was different to others. It is pleasing to note that there was no variation in results. This demonstrates that we have developed a plan that is affordable.

**“I am unable to work, mainly due to poor mental health, I honed in on the 'lower' bills statement piece. I have to 'trust' that companies I use, are doing the 'right' thing for their customers, and I trust that Northumbrian Water are implementing this for myself and other customers.”**

**Online acceptability research**  
45-64, DE



## 2.1.2 Our customer research, participation and engagement continued

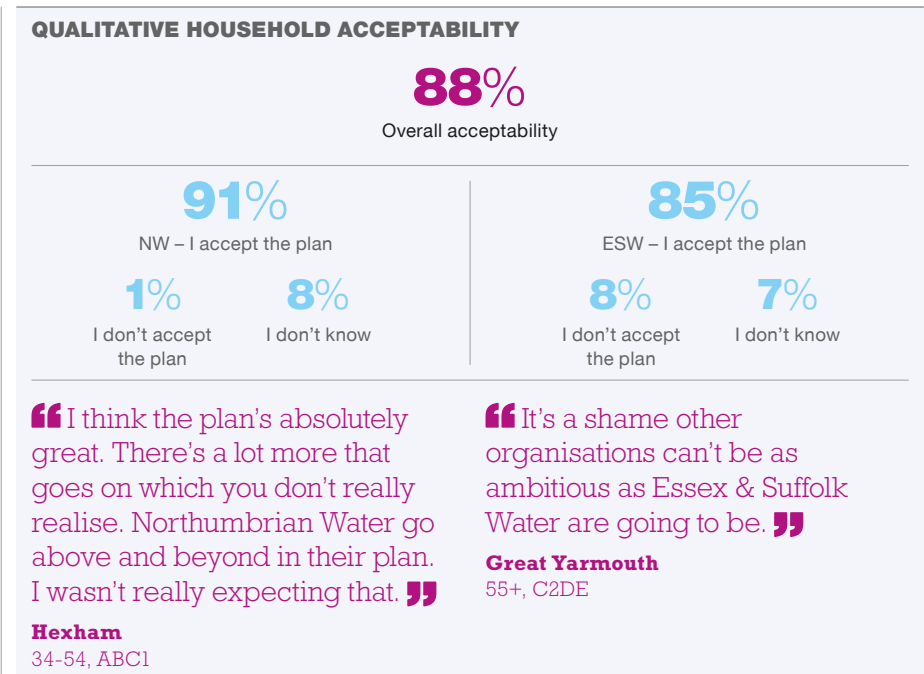


**Non-household engagement**  
Our quantitative engagement with wholesale customers, retailers and NAVs achieved 93.2% acceptability for our plan. This includes customers who required further information before making their decision. The relevant copy of Our Plan 2020-25 was sent to them and they were contacted again by telephone to ask them whether the plan was acceptable.

Very high levels of acceptance were received from wholesale customers, retailers and NAVs in both operating areas.

Ofwat IAP test areas

- EC Engaging customers
- CMI Targeted controls, markets and innovation



**Qualitative household engagement**  
In our qualitative engagement with household customers, we were thrilled to achieve 88% acceptability for our plan. At these deliberative events we were able to explore the reasons that customers did not accept or did not know whether to accept our plan. The main reasons given were that it was too good to be true, that it was just a plan and not a guarantee, and that it did not include enough detail. We told our ESW customers that Anglian Water had told us that its wastewater

customers could expect that element of their bill to increase by 2.5%, and that Thames Water had said it expected its bill to remain flat. Our household customers in Anglian Water's area had a higher level of acceptability (87%) than those in Thames Water's area (79%).

**Acceptability conclusion**  
**In conclusion, we received excellent levels of customer support for our plan, which we attribute to the fact that it has been shaped by the views of over 400,000 customers. We are confident that we have co-created a plan that our customers support.**

## 2.1.2 Our customer research, participation and engagement

continued

### Additional engagement Social Tariffs

Between November 2018 and January 2019, we carried out additional engagement with 1,815 customers to understand their willingness to contribute to a new social tariff designed to support low income pensioners. This engagement was carried out using an online survey panel provider and was supported by in-home interviews (to target customers aged over 75, who have disabilities or speak English as a second language) and hall tests (in Hartlepool) using computer-assisted personal interviewing.

A detailed explanation of the proposed new social tariff for low income pensioners was provided. Customers were asked whether they would be willing to contribute a given amount per year on top of their current bill to reduce bills for low income pensioners who are genuinely struggling to pay their water and wastewater bills. Starting values were randomly assigned between 50p and £5 and analysis has shown that the starting point had no significant effect on results.

- Overall, 88% of customers would be willing to contribute something towards the low income pensioner social tariff through an increase in their bills
- Half of customers support contributing an additional £3.50 towards this tariff in NW and ESW, and half support a contribution of £3 in Hartlepool.
- 66% of NW customers support an additional £2 contribution and 66% of HW and ESW customers also support an additional £2 contribution.

#### Ofwat IAP test areas

- Engaging customers
- Targeted controls, markets and innovation

### Post Initial Assessment of Business Plan engagement

Following Ofwat's Initial Assessment of our Business Plan (IAP), we identified a number of areas where we wanted to gather customers' views to help inform our response to the IAP. Specifically, we wanted to engage with customers on:

1. Enhanced multiplier rates for penalties and rewards.
2. Discoloured water definition and whether issues relating to water entering the home should be considered separately to those issues caused by in-home plumbing fixtures and fittings.
3. The relative inconvenience of short water supply interruptions (1-3 hours) compared to those greater than 3 hours.
4. External sewer flooding and whether a reward should be available if we exceed our performance commitment.
5. Void properties and if we should introduce a 50/50 sharing mechanism with customers.
6. Future (2025-30) bill profiles.

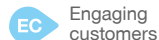
We 'mimicked' the approach that we used for our Acceptability Engagement and held six deliberative workshops with 167 customers throughout our operating areas. This approach allowed us to explain technical issues to our customers and hold meaningful conversations to understand their views and the reasons for them. The findings from this engagement have been appropriately incorporated in our response to Ofwat's IAP and the full report from Explain Market Research can be found in an Appendix to our IAP Response.

# 2.2

## How the independent Water Forums have shaped the plan

This section describes the role played by the Water Forums in providing independent assurance to customers, Ofwat and to us as a company. Through their challenge, support and expertise, Water Forum members pushed us to go as far as we possibly could to put our customers, communities, and the environment at the heart of our future plans.

### Ofwat IAP test areas



## 2.2 How the independent Water Forums have shaped the plan

### A blueprint for a new way of working

The Water Forums have been central to our thinking and have been very deeply involved in the design and interpretation of our customer research and engagement programme. There has been a broad, ongoing role, substantially extending the role they played at PR14.

To learn any lessons and to incorporate good practice from PR14 the Water Forums carried out a full review in 2015. This led to the development of a blueprint that encapsulated their vision to move beyond being independent to being self-determining and proactive.

The Water Forums have worked thoroughly at all levels, from active engagement with Board members and our senior leadership team through to meeting employees who provide our front-line services. They were keenly focused on our customers and our customer engagement and provided strong challenge based on their expert knowledge and understanding.

To support their objectives and monitor progress against the quality of their activities the Water Forums set 12 MoS.

**A** See Appendix 1.2

### Independence ensured through governance and process

The independence of the Water Forums is set by the quality and power of the members, and is protected by the governance and processes under which they operate. These include:

- Appointment of their independent Chair – led by the Water Forums' Nominations Committee;
- Appointment of new members – led by the independent Chair;
- Agreement of the 'rules' set out in the Water Forums' Terms of Reference;
- Pre-meeting deliberation sessions, and in-camera meeting reviews;
- Meeting satisfaction surveys (see the Water Forums' report); and
- Maintenance of the Water Forums' Challenge Log.

All material information relating to the Water Forums has been published on their section of our website. This information includes a Journal, prepared by the Water Forums' independent author, explaining the Water Forums' work to customers as the process went along.

## 2.2 How the independent Water Forums have shaped the plan continued

The Water Forums had access to transparent information. Members also undertook regular deep-dives into specific areas and fact finding visits.

The Water Forums themselves shaped their ways of working to maximise their contribution and challenge. For example, to have most impact, members required all meeting information to be provided in advance. They also spent one hour in session before members of the ELT joined the meeting. Water Forum papers were taken as read and company representatives were directed to keep any presentations to no longer than ten minutes per hour of meeting time. The Water Forums agreed that there would be no 'general' discussions. These 'rules of engagement' enabled greater focus and more rigorous challenge.

From 2016 onwards members monitored their meetings in mood surveys. These surveys measured the quality of our engagement with the Water Forums and the ability of members to achieve their aims. The survey results provided us with a clear understanding of members' needs and of their views on our performance and our commitment to the process.

### Engagement with our Board

The Water Forums made sure that maximum value was derived from every contact with our Board. They therefore agreed and adhered to the following principles:

The engagement should provide assurance to the Water Forums that the Board is:

- Aware of Water Forum activities;
- Listening and responding to Water Forum challenges, and open to change; and
- Available to be consulted if the need arises.

#### Ofwat IAP test areas



“ For PR19, we have had two Water Forums, reflecting the company's geography. However, they have worked as one, with a single Chair. This new approach has, I believe, worked well. The expertise among Forum members new and old, allied to the open, transparent and engaging approach taken meant we were able to offer constructive challenge, insight, experience and knowledge from the outset.

The company supported this approach by providing information in a transparent way, and of course, respecting our independent discussions, views and input. We trust that the result is a strong final report that reflects the breadth and depth of our work. ”

**Melanie Laws**  
Water Forums Vice-Chair

## 2.2 How the independent Water Forums have shaped the plan

continued



The engagement should provide assurance to the Board that:

- The Water Forums are independent and are operating at arm’s length from the company;
- Members have the required expertise;
- Members are providing strong challenge to the company;
- Members are fully engaged with the company; and
- Members know their role, and are demonstrating that they are focused on it.

The Water Forum and the Board embarked on an active programme of engagement of both formal and informal meetings as well as through papers. This included:

- The Water Forum Chair, Vice-Chair and other members attending appropriate full Board and Board Sub-group meetings;
- Board INEDs attending Water Forum meetings and workshops;
- The Water Forum Chair, Vice-Chair and members jointly attending customer and stakeholder engagement events with INEDs; and
- The Board having access to all Water Forum papers and meeting notes.

### Ofwat IAP test areas

**EC** Engaging customers

### Engagement with the plan

We agreed with the Water Forums that we would share our plans with them from the very early stages. For example, we shared the results of our customer engagement with members, as well as our draft business plan strategies.

Members understood that the plans would evolve in light of the triangulation process and ultimately the acceptability research. They advised and challenged throughout this engagement, which helped us hone our approach and presentation and enabled members to meaningfully engage in our shared journey to develop our plan.

Members found this early sharing very useful, helping them target their focus and plan their report. In summary members saw the emerging:

- Outcomes of research from January 2017;
- Draft business plan elements from November 2017;
- Draft business plan overview in March 2018; and
- Acceptability research outcome and final business plan in July 2018.

### Water Forum members’ expertise

In addition to the challenge role within formal Water Forum meetings, members worked extensively with the company outside of the meetings to focus on areas that reflected their own expertise. These areas follow our business’s strategic themes: customer, community, environment and economic impact (competitiveness). Detailed information is provided in the Water Forums’ independent report.

Two illustrative examples of this work are included below.

### Affordability and Inclusivity Strategy

When we first outlined the work that we were undertaking to support customers who need additional help and support, members saw that this support was not consistent. They also noted that financial support focused on affordability support for customers who were already in arrears and/or receiving benefits.

## 2.2 How the independent Water Forums have shaped the plan

### continued

They challenged us to support customers in a more holistic way.

They suggested we do this by considering the financial impact we can have as a business on customers, through the ways in which we engage and provide services. Members also suggested ways to prioritise our work and gave us specific tasks, including:

- Mapping our areas to identify where customers may need additional support;
- Defining what a water/wastewater specific vulnerability is;
- Conducting specific research with customers who need additional help and support, who had experienced service failures; and
- Segmenting and engaging with customers to improve take-up of WaterSure.

Members made a key point about affordability, which was that even if all water companies maximised their take up of social tariffs, this would still have little impact on financial vulnerability. This led to us reviewing our approach to designing a long-term strategy and focusing on how we could eradicate water poverty. As a result this plan now includes proposals that will fundamentally change the affordability and inclusivity of the services we provide.

#### Ofwat IAP test areas



Engaging customers

#### Our ambition for the environment

The Water Forum Environment Network, a specialist sub-group, met three times between December 2017 and June 2018. We consulted this group in developing the environmental aspects of our plan. The group challenged us on our catchment approach, our 'wider environment' approach, our ambitious goals, our business commitments, and our performance commitments (PCs) relating to the environment.

As a result of these discussions and the group's constructive criticism, we developed an ambitious goal incorporating catchment management, natural capital and biodiversity, set a lower pollution target than originally proposed for 2025, and had the confidence to launch our Improving the Water Environment scheme to stakeholders at our Innovation Festival in July 2018.

With their support and challenge, we produced a plan for the environment theme that meets our customers' expectations and will create a step-change in our approach to the environment for 2020-25.

These are just two examples of the invaluable inputs we have had from the Water Forums. Other areas where members have put us under additional scrutiny in deep-dive sessions or fact finding visits include:

- Our ambitious goals;
- PCs and incentives;
- Abstraction Incentive Mechanism (AIM);
- Water resources (national and local);
- Water quality;
- Water treatment;
- Wastewater operations (including sewer flooding and environmental performance);
- Leakage;
- Resilience in the round;
- Enhancements (cost, customer expectation and benefit);
- Reporting of performance to customers;
- Asset health measures – how they protect current and future customers;
- Securing cost efficiency – need for investment;
- Financeability; and
- Bill profiles.

In addition, the Water Forums have played an important role in monitoring our current performance against:

- The PCs made in our 2015-20 business plan;
- Our annual Assurance Plan;
- The 'Our Contribution Report'; and
- Our Water Resource Management Plans (WRMPs).

We have worked with members as we developed our plans, so their challenges were varied, numerous, and iterative. The main areas of challenge are summarised in the table overleaf. This section ends with a summary showing the Water Forums' assessment of our engagement.

**To conclude, the Water Forums have provided their own independent report to Ofwat. This sets out the challenges they have made in relation to our engagement with customers and their assessment of the extent to which this engagement has shaped our plan.**

#### Post Initial Assessment of Business Plan engagement

As soon as we received the Initial Assessment of the Plan, our Water Forums were keen to understand what actions Ofwat had tasked us with so that they could continue their powerful, challenging role. As always, they played a very important part in ensuring not only that the customer research we did was effective, but that our plans strongly reflected the findings of all the engagement activity we have undertaken during the PR19 process. Their challenges and comments are laid out in the Supplementary Report of the Water Forums, which we have included as an appendix. It is also available on the Water Forums pages of our websites.

## 2.2 How the independent Water Forums have shaped the plan

continued

### Summary of the Water Forums' challenges and the impacts on our plan

“ The company and its research partners rose to the challenge of creating tools to surface the views of customers on relative priorities and valuation that were engaging and yet had an acceptable cognitive load. Establishing meaningful and reliable data from these exercises will always be a challenge, but the approach taken led to some actionable results. ”

**Professor Bernard Crump**  
CCWater

Area of Water Forums' challenge	Nature of challenge	The Water Forums' view on the company's response	The Water Forums' view on how this has shaped the plan
<b>Triangulation</b>	Members challenged the company on its plans to triangulate customer research, saying that the company would need to provide assurance that the research was coherently brought together, and was statistically robust and representative overall.	<p>The company held an early workshop with members on its proposed approach to triangulation, which covered all customer insights. As a result the approach was refined to make sure that appropriate weighting and consideration was given to the outputs of the customer insights.</p> <p>The findings from the triangulation were shared with the Water Forums during three working group sessions which covered the proposed enhancement schemes, proposed PCs and the proposed ODIs.</p> <p>The company's acceptability research involved a statistically representative sample of customers in its operating areas.</p>	An agreed method was developed to provide robust analysis of customer views, which gives the Water Forums and the company confidence that customers' views are genuinely represented.
<b>Ensuring that charges are affordable – and additional support for customers who may need it</b>	Members thought that the company was excellent in the way it supported the customers it knew needed additional help and support, but was behind others in the sector with regard to the take-up of its support schemes and social tariffs.	<p>The company agreed that take-up was low, and it worked with Water Forum members as it co-created its Inclusivity Strategy with customers. The company devised an action plan for anything that was identified as being missing from the strategy.</p> <p>In addition to the support schemes already in place the company launched a new tariff on 1 April 2018. Leaflets about each of the schemes were distributed through customer engagement campaigns. This led to an immediate significant increase in the number of customers registering for help.</p>	The plan encompasses many of the activities identified. The company has made a commitment to eradicate water poverty by 2030, is working with partners to better reach customers who need support, and has introduced a new bespoke measure in relation to customer awareness of the help and support that is available.
<b>Long-term planning</b>	The company was challenged to produce a long-term strategy, as context for its business plan.	The company welcomed this challenge and published its long-term vision statement 'Shaping our Future' in March 2018. Customers provided their views on the themes and proposals within the document during May 2018.	The document provides a clear vision for the company's strategic ambitions in the long term and sets a clear context for its PR19 ambitions.
<b>Future customers</b>	<p>The company was continuously challenged to make sure that it kept future customers always in mind.</p> <p>The Water Forums noted from the Defining the Conversation research that younger customers are asking for engagement on more issues, and challenged the company to think about how it could best use this insight.</p>	<p>The company includes future customers in the customer research and engagement that it carries out. Sometimes, future customers are included in the main projects but on other occasions engagement with future customers takes place around specific subjects.</p> <p>An example of this is the Future Customers event that the company held at its Howdon sewage treatment works (STW). The company grouped together a number of wastewater research projects and covered them all with future customers in a more interactive and engaging manner.</p>	<p>The company has made great efforts to engage young people in developing the plan, ensuring their views are represented.</p> <p>The session that it held at Howdon STW was a positive example of engagement with this group, and the sort of thing members would encourage the company to do more of.</p>

## 2.2 How the independent Water Forums have shaped the plan

continued

### Summary of the Water Forums' challenges and the impacts on our plan

continued

Area of Water Forums' challenge	Nature of challenge	The Water Forums' view on the company's response	The Water Forums' view on how this has shaped the plan
<b>Assurance</b>	The company took a sub-group of the Water Forums through the detail of its assurance approach, and the questions it would ask itself. Members made 12 key recommendations, providing the challenge that members needed to satisfy themselves that customer engagement was being continuously and thoroughly checked and incorporated by the company.	This resulted in the co-creation of a dashboard which gave joined-up assurance of the company's business plan for the company and the Water Forums.	The dashboard was examined by members at each meeting. Members were able to monitor company progress and choose appropriate areas of the plan for deep-dive sessions, eg leakage, resilience, the long-term plan and wastewater.
<b>Metering</b>	The Water Forums challenged the company as it developed its metering customer research project in early 2017 to present metering in a neutral way and to make sure that the dis-benefits of metering for some customers were not ignored.	The company wanted to test uninformed and informed views on metering. It gave careful thought as to how it could inform customers in a way that was as neutral as possible. Although the research was for the WRMP the company did not want to assume that this was the context in which customers would relate to metering. It presented the research as being about metering and began the research by asking customers to say what they saw as the benefits and dis-benefits of metering. The company made a film of the information it wanted to share with customers during research so that the information would be as neutral and as clear as possible. This approach also ensured that the company had given coverage to both the advantages and disadvantages of meters in its information.	As the company did not enforce a context of water resource management in its discussion with customers, it learned that customers want to position the question of choice about metering over and above managing water resources and saving water. Ownership of the company's metering plan has been passed from the Water Directorate to the Customer Directorate in line with the principle that serving customers well is the first priority. The company is introducing 'whole area metering' instead of compulsory or change of occupier metering. This involves putting meters in a whole area but giving customers the choice to opt into measured bills or remain on an unmeasured bill for as long as they choose. This will allow the company to increase meter penetration without taking away customer choice.
<b>Interruptions to supply</b>	The Water Forums challenged the company, as industry leader in this area, to propose a new measure.  Regarding the common interruptions over or more than three hours measure, the company proposed a PC tighter than industry upper quartile. Water Forum members challenged the company on this, on the grounds that it did not look stretching compared with recent performance.	In response to the challenge, the company introduced a new measure for interruptions over one hour.  The company also made a further adjustment to its PC for the common interruptions measure. The company remains mindful of the need for PCs to be fair when compared with other companies.	New more stretching measures around interruptions to supply are included in the plan.
<b>Sewer flooding measure and visible leaks measure</b>	The Water Forums challenged the company to keep the repeat sewer flooding measure, and introduce a customer facing measure regarding response times to visible leaks.	The company responded by keeping a repeat sewer flooding measure. The definition of the measure has been refined to make it more transparent for customers and stakeholders.  The company has introduced a new measure for response times to visible leaks.	New measures for visible leaks and sewer flooding are included in the plan.
<b>Pollution incidents</b>	The Water Forums challenged the company regarding having an ODI reward for pollution performance.	The company is maintaining its position of having an ODI reward for pollution. This is on the grounds that customers were strongly supportive of ODIs for this measure, and is consistent with Ofwat's PR19 methodology.	Given the evidence presented that customers supported a reward for this measure, most members are supportive. The members who disagreed are from the EA, whose policy is that pollution incidents should be penalty-only rather than penalty and reward and so these members maintain their stance.



## 2.2 How the independent Water Forums have shaped the plan

continued

### Summary of the Water Forums' overall assessment of our engagement

The information in this table is a high-level summary of the Water Forums' assessment of our engagement against the criteria set out in Ofwat's Aide Memoire for CCGs (March 2018). More detailed assessments are provided in the Water Forums' report.

Ofwat aide memoire for CCG	Water Forums' response
Has the company developed a genuine understanding of its customers' priorities, needs and requirements – and where appropriate customer valuations – drawing on a robust, balanced and proportionate evidence base? Has the company engaged with customers on the issues that really matter to them?	Our view is that NWL certainly understands its customers' priorities; and understands their needs to a significant extent. Early in the process the company developed a comprehensive customer engagement strategy to steer its approach, which helped it make large strides forward compared to PR14. Importantly, we feel that it struck the right balance between the level of detail gathered and the cost of doing research and engagement activity. Triangulating all of the data proved a tricky process, but the company genuinely took our challenges and expert support on board and responded well.
Where appropriate, has the company engaged with its customers on a genuine and realistic range of options? For example, in relation to a need to rebalance supply and demand, this might include increasing its own capacity, purchasing water from another company or demand management options. Where appropriate, has the company considered how customers could help co-create and co-deliver solutions to underlying challenges?	The company was able to present meaningful options to customers in its service valuation research, because its approach started with Defining the Conversation engagement – understanding what and how customers wanted to engage with the company on. A broad suite of proposed PCs demonstrates that NWL responded to what customers told them. Our view is that the high levels of acceptability of the business plan resulted from presenting a genuine and realistic range of options to customers.
Has customer engagement been an on-going, two-way and transparent process, where companies are informing their customers as well as soliciting feedback from them?	NWL is a company that constantly engages with its customers; and it does not just do it when developing a business plan. At the 41 research events we attended, we saw managers and team members who were keen to listen and learn; and to inform or educate customers about the subject matter too. They often faced the challenge of low awareness levels, so we are pleased that in some of the research activity they used an 'uninformed view then informed view' approach to understand the difference that made to the results. The company's closure of the PR19 participation loop – by inviting customers who participated at the original Defining the Conversation events to attend the acceptability qualitative events – was an interesting approach to being transparent about the whole PR19 process.
Has the company effectively engaged with and understood the needs and requirements of different customers, including those in circumstances that make them vulnerable? Has the company considered the most effective methods for engaging different customers, including those that are hard to reach?	Overall, the company has made good attempts to reach and get engagement with different types of customers, including those in remote communities, future customers, and those who are vulnerable from a bill affordability point of view. Using more sophisticated engagement, we believe that it now has a better understanding of more types of customers across a wider range of types, situations, locations and needs. There is still more to do: looking at vulnerability, the company has made a really good start to understanding a very complex customer base – we encourage them to draw on best practice from other sectors to continue on this journey.
Has the company effectively engaged with its customers on longer term issues, including resilience, impacts on future bills and longer-term affordability? Does the business plan adequately consider and appropriately reflect the potential needs and requirements of future customers? Wherever appropriate, has the company engaged with its customers on the long-term resilience of its systems and services to customers?	Customers have had positive opportunities to shape the longer-term issues, including through the innovative service valuation tool, where they were given the chance to see the effect, on their own bill, of their choices about proposed long-term investments and enhancements. There is much evidence of co-creation and co-delivery of solutions to longer-term challenges – two notable examples are the Inclusivity Strategy, which changed direction due to what customers said; and the wastewater sprints, where the ideas generated, combined with challenge from the Water Forums – to be more ambitious and confident in its ambitions – ultimately resulted in the well-received Improving the Water Environment scheme.
Has the company effectively informed and engaged with customers on its current levels of performance and how does this compare to other companies in a way customers could be expected to understand?	We endorse NWL's approach to be very transparent (via its website) about its comparative performance, and to reach outside the water industry to find benchmarks and examples that customers readily relate to, including them in the critically important Service Valuation and Acceptability pieces of research. We encourage them to go yet further, finding ways to get increasing numbers of customers to access and use the information, as part of its efforts and targets to increase active participation.
Has the evidence and information obtained from customers (including through the company's day-to-day contacts with customers) genuinely driven and informed the development of the business plan to benefit current and future customers? What trade-offs (for example between different customers) have been identified and how has the company proposed to deal with these?	There are numerous examples of how the outputs and insights from customer engagement have genuinely shaped the business plan, as well as the day-to-day activities of the company. In our discussions around social tariffs and metering in housing blocks we recognise that a balance needs to be struck between competing needs of different customer groups and business priorities and our views on this matter form part of the Water Forums' report, submitted alongside the business plan.

# 2.3

## How our stakeholders have shaped the plan

This section outlines how we have engaged with our key stakeholders, how this has helped shape our proposals, and how we will continue to work on 'big ideas' with our stakeholders to deliver our plan.

We consider our stakeholders to encompass all those who are impacted by or have an interest in our activities – including regulators, our employees, suppliers and partners – the organisations that work with us to make a difference to our customers' lives.

### Ofwat IAP test areas

- Engaging customers
- Securing long-term resilience
- Targeted controls, markets and innovation

**500+**  
different stakeholder organisations participated

## 2.3 How our stakeholders have shaped the plan

### Developing our plan with our stakeholders

In developing our plan, we have engaged with, co-imagined and co-created with around 500 external organisations. These include six of our regulators (Defra, Ofwat, Environment Agency (EA), Natural England (NE), CCWater and the Drinking Water Inspectorate (DWI)), our suppliers, and our partners, including over 90 environmental partner organisations. More than 500 of our employees have also contributed to this plan.

Our regulators have shaped our plan as we have sought to develop proposals that meet their expectations. We also consider the EA and NE to be partner organisations, as we work together to deliver shared objectives for our regions. These organisations have therefore been very closely involved in the development of our plan.

Alongside our active and ongoing stakeholder engagement programme, we have undertaken specific stakeholder engagement activities for PR19. We are confident that we have a genuine understanding of our stakeholders' priorities, and have taken this into account in our plan. As a result this business plan is the most inclusive plan we have created, and we are fortunate that we have the support of our stakeholders to deliver it.

### Our regulators

#### Defra

Defra has responsibility for setting the overall water and sewerage policy framework in England.

It provided advice to the water and sewerage companies on their business plans through its document 'The government's strategic priorities and objectives for Ofwat' (2017). We reflect Defra's priorities and objectives within our plan:

**Securing long term resilience:** Defra's priority is that 'Ofwat should challenge the water sector to plan, invest and operate to meet the needs of current and future customers, in a way which offers best value for money over the long term'. Our approach to resilience, as set out in Section 3.3, addresses Defra's four resilience objectives relating to water supply, wastewater, resilience against flooding and wider risks, and the environment.

Our Resilience Framework covers 'resilience in the round' and sets out our progress in developing long-term plans. Partnership approaches in particular allow us to consider and deliver cost-effective catchment solutions to benefit customers, communities and the environment, and are a key aspect of our plan.

## 2.3 How our stakeholders have shaped the plan

### continued

**Protecting customers:** Defra's priority is that 'Ofwat should challenge the water sector to go further to identify and meet the needs of customers who are struggling to afford their charges'. Its objectives for protecting customers relate to both household customers and business customers, as every home and business depends on a resilient water industry. Defra also places a focus on bad debt as this pushes up bills for all customers.

Our plan has been developed to be inclusive for all. Our customers have a strong belief that water charges should be affordable for everyone, and we will demonstrate leadership in promoting the affordability agenda. To do this, we will collaborate with others, as a partnership approach to tackling water poverty across the sector will have far more powerful results than individual companies working alone.

Our plan includes the development of new social tariffs, which are supported by our customers. Our proposals for delivering affordability for customers within our plan will also help to address bad debt.

**Making Markets Work:** Defra's priority is that 'Ofwat should promote markets to drive innovation and achieve efficiencies in a way that takes account of the need to further: (i) the long term resilience of water and wastewater systems and services; and/or (ii) the protection of vulnerable customers.'

**229** Section 6 sets out how we will use markets to drive competition, bring greater innovation and achieve cost efficiencies

We fully support the Government's Industrial Strategy. Its five foundations – of ideas, people, infrastructure, business environment and places – align with our own vision and ambitions. Our plan's focus on building resilience, leading in innovation, and promoting the sustainable use of natural resources will contribute towards addressing the grand challenges of AI, the data economy and clean growth in particular.

#### Ofwat IAP test areas

- EC Engaging customers
- LR Securing long-term resilience
- CMI Targeted controls, markets and innovation

We are committed to supporting Defra's environment strategy (as outlined in 'A green future: Our 25-year plan to improve the environment', 2018) and are keen to play our part in delivering the plan's ten goals to protect and enhance the environment for future generations. Our own plan sets out how our ambitions for 2020-25 will contribute to meeting these goals, including achieving clean air, clean and plentiful water, thriving plants and wildlife, reducing the risk of harm from environmental hazards, using resources from nature more sustainably and efficiently, enhancing beauty, heritage and engagement with the natural environment, minimising waste, and enhancing biosecurity. Defra's strategy recognises that one of the ways in which these goals will be achieved is through 'strengthening leadership and delivery through better local planning and more effective partnerships'. This provides valuable context and support for our own aspirations for the environment.

#### Ofwat

As our economic regulator, Ofwat is a key stakeholder. We engage frequently with Ofwat through meetings, workshops, consultation roundtables and focus groups, as well as by hosting visits. 'Delivering Water 2020' (2017) set out Ofwat's expectations of companies for 2020-25, structured around the themes of:

- Great customer service;
- Resilience in the round;
- Affordable bills; and
- Innovation.

These themes reflect our own themes and our plan demonstrates our ambitious proposals in each of these areas.

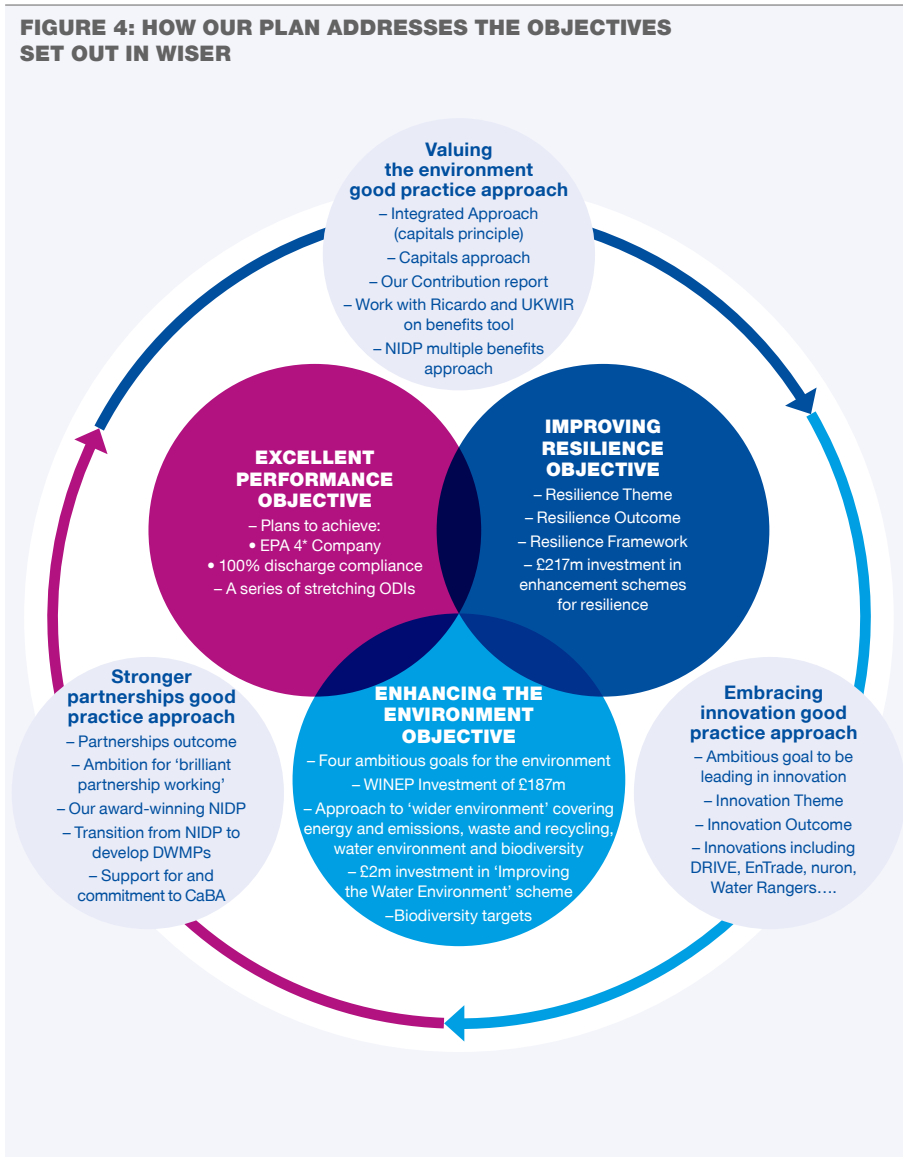
As early adopters of customer participation, we welcomed Ofwat's 'Tapped In' report (March 2017). We have demonstrated our commitment in this area through the publication and adoption of our own participation strategy 'From customer consultation to a culture of customer participation' and in our ambitious goal for customer participation.

We welcome Ofwat's aspirations for the sector to be 'on a par' with the wider customer service sector. We aim to go further with our own Unrivalled Customer Experience strategy and our ambitious goal to deliver world class customer service.

## 2.3 How our stakeholders have shaped the plan

continued

**FIGURE 4: HOW OUR PLAN ADDRESSES THE OBJECTIVES SET OUT IN WISER**



**Ofwat IAP test areas**

- EC** Engaging customers
- LR** Securing long-term resilience
- CMI** Targeted controls, markets and innovation

**Environment Agency and Natural England**

We work very closely with the EA, our environmental regulator, to help improve the quality of rivers and coastal waters, and to co-develop plans to protect and improve the environment. The EA's vision is to 'create a better place for people and wildlife', and its culture aligns closely with our own values and aspirations, including to 'seek partnership, show leadership', 'focus on outcomes not processes', and 'one team: support and trust each other to do the right thing'. The EA is one of our key partners, a relationship promoted and strengthened within our regions through the CaBA.

NE, the Government's advisor on the natural environment, has three guiding principles as set out in 'Conservation 21: Natural England's Conservation Strategy for the 21st Century' (2016): creating resilient landscapes and seas; putting people at the heart of the environment; and growing natural capital.

The EA and NE issued a joint strategic steer on the environment, resilience and flood risk to support water companies in developing their business plans. The ambition set out in their guidance, the Water Industry Strategic Environmental Requirements (WISER) (2017), 'to achieve a water environment that is cleaner, healthier and managed in a way that is more resilient to floods and drought and better supports people, wildlife and the economy', aligns closely with our own.

Figure 4 shows how our plan addresses the objectives set out in WISER, and how we will demonstrate environmental leadership through the three good practice approaches identified. We have embedded the statutory obligations and regulatory expectations set out in WISER into our plan, through the plan's resilience and environment themes and the PCs and investment plans set out within these.

- 92** See Section 3.3
- 148** See Section 3.5

The EA also requested in WISER that we 'consider enhancements which go beyond the statutory minimum where there is customer support, and wherever possible identify opportunities for working in partnership to achieve wider environmental benefits'.

Our partners are key to delivering our plan, and our aspirations for the wider environment illustrate our commitment to go 'above and beyond'.

We worked with the EA and NE to develop and agree the content of our portion of the Water Industry National Environment Plan (WINEP) (2018), a key part of our plan for 2020-25. The WINEP identifies environmental transformation activities, setting out the schemes to be delivered, level of investment required, and targets to be achieved in order to make environmental improvements that will allow us to meet our regulatory obligations.

## 2.3 How our stakeholders have shaped the plan

continued

Representatives of the EA and NE also play an important role on the Water Forums. Their challenge through Water Forum discussions shaped our ambitious goals for the environment, our development of demand-side options for water resource management planning, and our commitment to take a catchment-based, integrated approach to delivering water and wastewater services, linked to the principles of our Integrated Approach (which is described in more detail later on in this section).

We are confident that our ambitious plans for 2020-25 and the step change this represents in our relationship with the environment more than meets the expectations of the EA and NE.

### CCWater

CCWater is the independent representative of household and business water consumers in England and Wales. It plays a crucial role by informing and engaging all water industry consumers on a wide range of issues so that their voices are heard and acted upon. Their research activity focuses on good customer service that is easy-to-access for all, affordability of services, and how water companies deliver safe, reliable water and wastewater services that everyone can trust.

CCWater publishes its findings within its annual 'Water Matters' report. The results of this survey have influenced our strategies for 2020-25 by making sure that our focus for delivering unrivalled customer service aligns with customer priorities and expectations.

We have a strong relationship with CCWater and welcome the constructive challenge and insights we have received on behalf of our customers from regional CCWater Chairs and CCWater employees through many of our engagement and participation events. CCWater plays a key role within the Water Forums, and was an active participant in our co-creation and co-imagination workshops during the development of our plan.

### Drinking Water Inspectorate

We engage with the DWI on an ongoing basis to make sure that our approach to drinking water quality is efficient and sustainable and will bring long-term benefits for customers.

This includes ensuring that drinking water quality is considered in any relevant cost-benefit assessments that we undertake. Our plan reflects our commitment to meeting our statutory obligations for drinking water quality, and this encompasses the way we manage our water resources and carry out our ongoing operational activities.

The DWI looks to the companies to take a 'source to tap' approach to planning and managing water supplies in a way that maintains safety, both to protect customers' health and to maintain confidence in the water supply. We welcome this, having already developed our own source to tap approach, which has been embedded within our business since 2014.

The DWI published its 'Long-term planning for the quality of drinking water supplies' guidance in 2017. In response we submitted our 'Long-term Water Quality Plan' in May 2018 (A See Appendix 2.6). This has water safety plans at its heart, identifying risk and enabling systematic risk reduction. In fact, all of our water quality plans (whether short, medium or long term) cover all aspects of our source to tap water service. As such, they aim to continue to protect our customers' health, demonstrate ambition in relation to industry performance, and recognise asset needs in line with our customers' and regulators' expectations.

### Employees

We recognise the human and intellectual capital that our people contribute across the business, and the opportunity presented by the fact that the majority of our employees are also our customers. We have therefore made sure that there have been many opportunities for our people to co-create the plan.

#### Ofwat IAP test areas

- EC Engaging customers
- LR Securing long-term resilience
- CMI Targeted controls, markets and innovation

At the start of the business planning process, we identified leaders across the business from our customer, water and wastewater workstreams. They took responsibility for engaging their teams and developing strategies for the plan. More widely, over 500 employees have been involved in core planning and shaping our plan.

### Suppliers

Our suppliers play a crucial role in the day to day success of our business.

171 See Section 3.6

We have made sure that suppliers have had the opportunity to share their thoughts about the future and to shape our proposals. The ways in which we have engaged with our suppliers include:

- We held a 'thought leadership' workshop with IBM where we explored the future of customer service;
- We invited suppliers to participate in our design sprints; and
- We held a dedicated 'supplier workshop' in 2017.

## 2.3 How our stakeholders have shaped the plan

### continued

#### Partners

As part of our business as usual approach, we work with over 1,000 non-governmental partnership organisations each year. A number of our partnerships, including the NIDP and the Chelmer and Blackwater Partnership, have been recognised as leading and are used as exemplars of collaboration best practice.

Our partners have shaped our plan and together we have developed a shared ambition for brilliant partnership working in our regions, which cuts across all of our themes

**171** See Section 3.6

Our commitment to partnership working is reflected across our plan.

#### Politicians and other regional influencers

MPs and councillors across our regions have a unique perspective on the issues affecting our customers, and how they interact with a range of other activities and interests that are influenced by our operations. As well as a regular series of meetings, specific opportunities for engagement have included:

- Engagement dinners at the major party conferences to gain insight into current priorities for our political representatives;
- Visits to our Innovation Festival from councillors and MPs to view and comment on how the innovations being considered will affect their constituents; and
- A dedicated Westminster launch event for our commitment to zero water poverty.

We also regularly engage with local authorities at an operational level, particularly to ensure that forward planning matches future developments and aspirations for localities.

We regularly interact with other stakeholders through playing a leading role in local, regional and national business organisations including the CBI and local Chambers of Commerce in our operating areas. Specifically we have been directly involved in projects covering infrastructure priorities and inward investment strategies for our regions, helping us make sure that we are preparing to meet the aspirations of the major organisations we work alongside.

#### Ofwat IAP test areas

- EC** Engaging customers
- LR** Securing long-term resilience
- CMI** Targeted controls, markets and innovation

#### Specific stakeholder engagement activities

Building on our understanding of our key stakeholders' priorities, we carried out specific stakeholder consultation events to develop this plan. More than 500 stakeholder organisations were involved in these events.

During the acceptability phase we held further conversations with stakeholders in each of our operating areas on the proposals within the plan. We had discussions with each local authority within our areas, covering both elected members and officers. We met with a cross-section of MPs from our operating areas and the two main political parties, including a presentation to the Northern Labour Group of MPs, of which the large majority of MPs in our NW operating area are members.

We engaged with local business representation organisations and a group of their leading members from a range of sectors, also including universities and social housing providers. Acceptability was high, with none of the stakeholders presenting objections to the proposals in the plan. We received a particularly positive response to proposals around affordability and environmental improvements, as well as having the opportunity to respond to questions on local operations and investment.

#### Design sprints

We use design sprints to explore and innovate and this has been true for our business plan development. For example we used design sprints to support the development of our 2020-25 water resilience strategy and plan. We also ran a design sprint to initiate our wastewater planning for 2020-25, bringing our people together with some of our regulators, representatives of key partnerships, and partners. It was this event that led to the concept of the 'wider environment'.

**148** See Section 3.5

We held seven design sprints and 'data hacks' at our 2017 Innovation Festival, where we co-created our plans for 2020-25 with a large number of customers and stakeholders. The Innovation Festival shaped our water plan in relation to leakage, with the leakage sprint and data hack challenging our traditional approach to leak identification. These events led to the idea for our Leaky Loos campaign and the development of projects relating to the next generation of leakage-finding technology. As a result of the festival outputs we have changed our approach to active leakage control management, placing a new emphasis on using improved data analytics and network logging technology for 2020-25.

## 2.3 How our stakeholders have shaped the plan continued

Our 2018 Innovation Festival included 13 design sprints on issues such as reducing leakage to help us meet our ambitious goal in this area, and to explore how we can work with our customers and stakeholders to significantly reduce PCC.

### Thinking Ahead workshops

In 2017, we held a series of seven 'Thinking Ahead' workshops in our NW and ESW operating areas. The workshops brought representatives from 91 partner organisations, regulators and Water Forums together with our employees, directors and Board members.

At our five catchment-level workshops, we identified a number of key themes for partnership working which embrace common objectives (including community engagement, sustainable drainage and green infrastructure, river and coastal water quality, biodiversity and access and recreation). Our two regional workshops in Ipswich and Durham allowed us to explore these themes further, and to discuss and develop our shared ambition for brilliant partnership working.

We understand that our partners and stakeholders expect us to:

- Build stronger local engagement with existing partnerships, communities and land managers to deliver improvements for common benefit against the identified themes;
- Continue to support the CaBA and to strengthen our partnership working;
- Use our investment to go beyond meeting WINEP obligations and deliver multiple benefits; and
- Play a leading role in developing regional partnership ambitions for the water environment which will help link the activities and aspirations of different partners and partnerships.

Our plans for 2020-25 reflect this understanding, and we will work very closely with our environmental partners to deliver our plan in these areas.

The workshops received many positive comments from participants as a great way to engage stakeholders in our business planning.

#### Ofwat IAP test areas

- EC Engaging customers
- LR Securing long-term resilience
- CMI Targeted controls, markets and innovation

**Working together to create integrated and sustainable flooding solutions to tackle flooding from all its sources gives better outcomes for customers.**

**Phil Rothwell**  
Chair of the Northumbria Regional Flood and Coastal Committee

### A shared ambition for brilliant partnership working

**In a bid to manage the challenges of flooding, we initiated a new approach in 2012 to work with stakeholders to better understand our drainage network. To some this felt, at the time, like a bit of a 'leap of faith'.**

In the Tyneside area we worked closely with the EA, five local authorities and the Lead Local Flood Authorities (LLFAs) for this area. These stakeholders became our partners. We shared data, held meetings and workshops, and jointly developed a list of priority areas to take forward for feasibility studies to reduce flooding issues (for which we provided 50% of the funding). These studies looked at reducing integrated flood risk, not just flooding from sewers which are our responsibility, but also from surface waters and rivers, as water from all of these sources can interact at times of high flow.

The Tyneside Sustainable Sewerage Study schemes led to flagship partnership delivery projects to reduce flood risk, including at Brunton Park, Monkton, Fellgate, and Killingworth and Longbenton. The approach was so successful that it was broadened out to the whole of our NW operating area, and became the NIDP, which now includes all 13 LLFAs in the North East.

As these schemes deliver integrated solutions, funding is shared across all partners. By working together in this way, flood risk has been reduced for more than 1,000 properties, and many more customers benefit from improved sewer drainage.

This award-winning exemplar of partnership approaches to reduce flooding demonstrates the benefits of working in partnership in urban areas, and sparked an ambition to extend our partnership approach. This has also been supported and encouraged by our experiences of partnership working to protect drinking water and promote biodiversity, and the rapid and evolving development of CaBA.

Working with our partners, including through our series of Thinking Ahead workshops, we have built on our partnership successes to develop a shared ambition for 'brilliant partnership working' within our regions, which cuts across all of our outcomes. The importance of partnership working as a business-as-usual activity is supported by our Integrated Approach, which will help embed partnership working within our everyday activities across the business.

## 2.3 How our stakeholders have shaped the plan

continued

### 'Big ideas' stakeholder opportunities

We recognise three exciting areas of opportunity for working with our stakeholders to deliver our plan, which will help us meet our ambitious goals:

- Expanding our Integrated Approach;
- Working together towards resilience; and
- Developing our capitals thinking.

#### Expanding our Integrated Approach

Our Integrated Approach includes – and started with – the concept of adopting a 'catchment approach' to deliver non-traditional and innovative partnership solutions to environmental issues such as water quality, drainage and flooding. However, it now goes beyond this to consider the benefits of taking a joined up approach to wider business decisions and activities. The approach recognises that planning and delivering our outcomes in a joined up way across the water cycle provides benefits for customers and the environment and will help us build resilience.

#### Ofwat IAP test areas

- EC** Engaging customers
- LR** Securing long-term resilience
- CMI** Targeted controls, markets and innovation

We are supported in this by our regulators, who also understand that there are major benefits to taking an integrated approach to water management. This is highlighted in a number of guidance documents, including Ofwat's Water 2020 and Towards Resilience (2015) documents, Defra's Resilience 'Roadmap' (2016) and the WISER document. Strong local leadership and a more integrated delivery framework are also the starting points of Defra's 25-year environment plan.

There are three key principles underpinning our Integrated Approach:

1. Understanding and valuing the capitals – we aim to embed capital approaches within the business.
2. Planning to achieve multiple benefits – delivering more for less will support affordable and sustainable water and wastewater services and benefit the environment.
3. Working in partnership – we will build on our excellent foundations by seeking opportunities to work in partnership with others for shared benefit.

Our Integrated Approach has helped shape our plan for 2020-25, for example, through our approach to managing flooding and our ambitions for the water environment. Over the 2020-25 period we will work with our stakeholders to expand the external aspects of our Integrated Approach further.

To do so we will focus on three areas:

#### Customer level

We will take a holistic approach to integrate all of the areas we work in, including providing water saving guidance, plumbing services, drainage care, flood prevention and advice on billing and tariffs. This will maximise the support we offer and the opportunities we have to encourage behavioural change. To deliver unrivalled experiences and make life easier for our customers, we will work with other stakeholders to extend the services we provide – for example providing energy saving guidance through our partner NEA.

#### Catchment and community level

We will realise multiple benefits through linking our own water management initiatives and campaigns within our collaborative communities approach. We will take this even further by joining up our own plans with those of our stakeholders, a process that will be supported by CaBA.

We will expand the remit of the NIDP and will link this to other stakeholders' activities. In developing this plan, we have benefited from an Integrated Flood Partnership Coordinator role seconded from the EA, jointly funded by us and the Regional Flood and Coastal Committee.

We will apply our catchment-based integrated approach to deliver whole catchment improvements driven by WINEP investment.

#### Water industry level

We will work with stakeholders to manage water resources at regional level, and explore opportunities for water transfers. We will be supported in this by the well-established Water Resources East and the new Water Resources North groups, of which we are key members.



## 2.3 How our stakeholders have shaped the plan continued

We will use our expertise as the industry leader in managing bioresources to work with other stakeholders to develop opportunities around bioresources markets, and to develop resilience in this area.

We will continue to work with Anglian Water and Thames Water in our ESW operating area to focus on joint issues and understand how we can best integrate our efforts. This will include focusing on the links between water resources and drainage and wastewater management planning, Water Framework Directive (WFD) challenges and activity, our Improving the Water Environment scheme, and our ambition to eradicate water poverty in our operating areas.

We engage with others in the water industry through business as usual activities, including Water UK and UK Water Industry Research (UKWIR) groups, at leadership level, and through specific engagement and general stakeholder activities.

We will also continue to invite others from the water sector to our annual Innovation Festivals.

### Working together towards resilience

As the concept of cross-sector and region-wide planning develops, we will have a significant role to play in supporting and influencing this new approach to regional resilience.

To underpin our ambition in these areas we will appoint a Chief Resilience and Sustainability Officer. This senior level appointment will have overall responsibility for evaluating and promoting the delivery of resilience in the round across the business – encompassing assets, systems, people, natural capital and financial resilience.

Based on a concept developed and pioneered by The Rockefeller Foundation's 100 Resilient Cities initiative, the appointee will work with stakeholders to provide leadership in our approach to resilience and sustainability at regional, catchment and community level.

#### Ofwat IAP test areas

- EC** Engaging customers
- LR** Securing long-term resilience
- CMI** Targeted controls, markets and innovation

### Developing our capitals thinking

We take a long-term, wide ranging view to understanding our impact on society and the environment, and we are committed to working with others to create positive change in our regions.

By taking account of other aspects in addition to financial performance, we provide a far more integrated and relevant picture of our contribution to our regions; this in itself is an important part of being accountable to customers. In our view there is a real opportunity to work with our stakeholders to develop a capitals thinking approach, which will be embedded in joint projects and used to demonstrate the wider and multiple benefits of our activities.

We started on our journey of capitals reporting in 2016. The Our Contribution reports for 2017 and 2018 provide an insight into our current contribution and our approach.

**A** See Appendix 1.2

We have considered our approach and chosen to use five capitals – natural, human and intellectual, social, manufactured and financial – as the basis for this work. We are currently working on more detailed metrics to look at the positive and negative flows of our business activities.

Our existing company balanced scorecard already drives us to manage our business in this holistic way and our approach to capital accounting will continue to evolve as our understanding and our work with stakeholders continues.

With support from PWC, we developed a number of priorities for future action in relation to our capital expenditure decisions, management information and business intelligence, and external reporting and stakeholder engagement. We will develop a programme of pilots for 2019 to explore capital approaches and work with our stakeholders to expand this into 2020-25.

**“**  
**We will develop our capitals thinking approach and embed it in projects.**

**“**  
**A Chief Resilience and Sustainability Officer will lead on resilience in the round.**

# 3.0

3.0 Delivering outcomes for our customers

3.1 Unrivalled customer experience

3.2 Affordable and inclusive services

3.3 Reliable and resilient services

3.4 Leading in innovation

3.5 Improving the environment

3.6 Building successful economies in our regions

# DELIVERING OUTCOMES FOR OUR CUSTOMERS

This section of our business plan is structured around our six business plan themes. The themes reflect our extensive conversations with customers and other stakeholders, along with our vision to be the national leader in the provision of sustainable water and wastewater services.

## 3.0 Delivering outcomes for our customers



### Unrivalled customer experience

- Our customers tell us we provide excellent customer service and resolve issues quickly;
- Our customers say they feel informed about the services we provide and the importance of water;
- Our customers say we are a company they trust;
- Our finances are sound, stable and achieve a fair balance between customers and investors.

53 See Section 3.1 to find out more



### Affordable and inclusive services

- Our customers say our services are good value for money and we work hard to keep water and wastewater services affordable for all.

78 See Section 3.2 to find out more



### Reliable and resilient services

- We are resilient and provide clean drinking water and effective sewerage services; now, and for future generations;
- Our drinking water is clean, clear and tastes good;
- We always provide a reliable supply of water;
- Our sewerage service deals with sewage and heavy rainfall effectively.

92 See Section 3.3 to find out more



### Leading in innovation

- We are an innovative and efficient company.

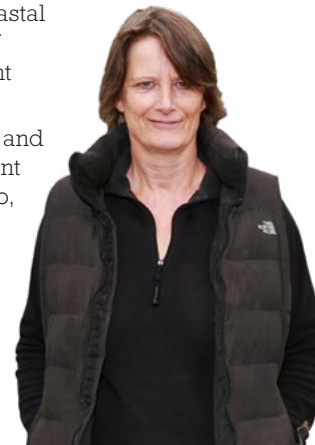
134 See Section 3.4 to find out more



### Improving the environment

- We help to improve the quality of rivers and coastal waters for the benefit of people, the environment and wildlife;
- We take care to protect and improve the environment in everything that we do, leading by example.

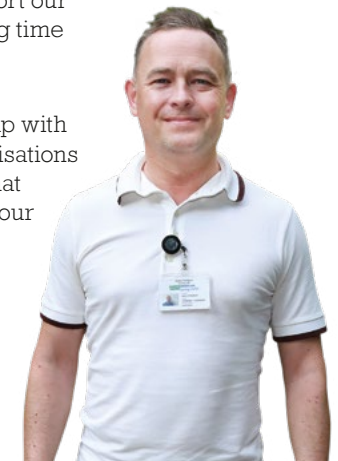
14 See Section 3.5 to find out more



### Building successful economies in our regions

- We are proud to support our communities by giving time and resources to their important causes;
- We work in partnership with companies and organisations to achieve the goals that are most important to our customers.

171 See Section 3.6 to find out more



## 3.0 Delivering outcomes for our customers

continued

### Delivering outcomes for our customers

Our 14 outcomes were first developed with our customers for the 2015-20 price review, and represent the aspects of service that customers value.

In developing this plan, we reviewed the wording of our outcomes and made some changes in response to customers' feedback.

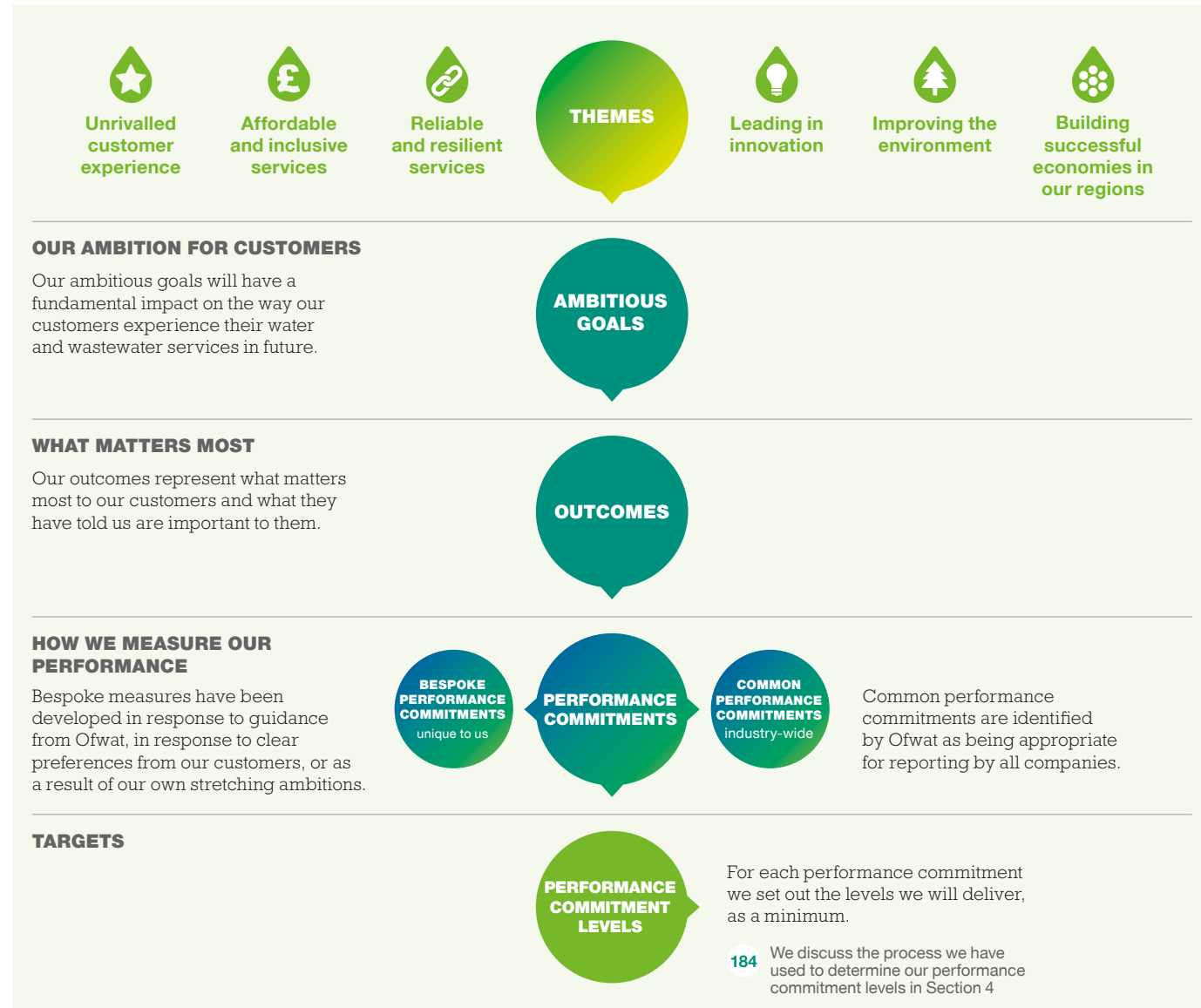
**A** More detailed information about the reviews is available in Appendix 2.2

### How we measure and report on performance

We set out in the following sections the measures that we will use to track and report on performance for each of our 14 outcomes.

We use a set of clear metrics, or 'measures of success' to do so. Some outcomes have several MoS.

The following sections outline the stretching PCs we have set for each measure.



#### Ofwat IAP test areas

- EC** Engaging customers
- AV** Addressing affordability and vulnerability
- OC** Delivering outcomes for customers
- LR** Securing long-term resilience
- CMI** Targeted controls, markets and innovation



# Unrivalled customer experience

“ We are particularly supportive of the goals for more active customer participation and raising awareness and understanding – not only do they reflect Ofwat’s Tapped In report, but also the findings of NWL’s Defining the Conversation research, where customers said they wanted the company to talk with them about the service they receive and about the value of water. ”

The Water Forums



## World class service, for everyone

“ There was clearly enormous stress on all services but I had complete faith my water company would deliver great customer service, whatever the weather. ”

Caroline Pye shivered with the rest of the country as a cold wave, dubbed the Beast from the East, brought us unusually icy conditions last winter. She watched as TV news reported chaos on the roads and social media channels flooded with stories of disruption to services and utilities.

But Caroline trusted her water company would deliver as usual. And it did. When her six children returned from playing in the snow, warm baths and hot chocolate were waiting.

[Click here to view Caroline's story, or scan the page in your Zappar app.](#)



# 3.1

## Unrivalled customer experience



Our unrivalled customer experience theme has four outcomes:

- Our customers tell us we provide excellent customer service and resolve issues quickly;
- Our customers say they feel informed about the services we provide and the importance of water;
- Our customers say we are a company they trust; and
- Our finances are sound, stable and achieve a fair balance between customers and investors.

Our ambitious goals for unrivalled customer experience are to:

- Deliver world class customer service; and
- Give every single customer the opportunity to have a strong voice and engage with us, with at least 2m customers participating by 2025.

### Ofwat IAP test areas

- EC** Engaging customers
- OC** Delivering outcomes for customers
- CMI** Targeted controls, markets and innovation

## Theme overview

**Our customers' expectations are rising, and what customers want from us is changing too. We will deliver a package of measures to support our aim to deliver unrivalled customer experiences.**

Customers' expectations can be impacted by the choices and immediacy that advances in technology provide, increasing the ability for customers to have their needs met how, when and where they want. Positive experiences that customers enjoy with other service providers can also influence their expectations.

During the development of our plan, the majority of our customers told us that they trust us to deliver the core aspects of water and wastewater services, but want to work alongside us to shape areas including customer service, value for money and trust.

We know from conversations with our customers that transparent and open reporting of our operational and financial performance engenders trust. We talk openly with customers about our finances and make sure that our financial arrangements are clear and easy to understand.

The innovations in this area that will deliver the difference for our customers are:

- We will horizon scan for examples of excellence in world-wide customer service and continuously benchmark and evolve our Unrivalled Customer Experience strategy accordingly;
- Our £36m customer experience platform and digital transformation programme 'ONCE', which will mean our customers only have to contact us once and will help us achieve a world class NPS;
- Using our bespoke Participation Ladder as a framework to widen engagement and strengthen the voice of our customers; and
- Co-created campaigns where our customers work with us to promote behaviour-change, including Every Drop Counts, Dwaine Pipe and Rainwise.

This section presents our planned activities to provide an unrivalled customer experience for:

- All customers;
- Developer customers; and
- Non-household customers, retailers and NAVs.

## 3.1 Unrivalled customer experience continued

### Outcome 1

Our customers tell us we provide excellent customer service and resolve issues quickly.

#### Why this outcome is important

Our ambitious goal is to provide world class customer service. We will measure this through the NPS, a measure of loyalty and how likely people are to recommend NWL to others. We are currently leading in the industry.

We want our service to be recognised by our customers as unrivalled, delivering superb value for money and experiences that get talked about for all the right reasons.

Our customers' expectations are rising and more than ever before customers will judge the companies they use by their approach to service (Service Measures, 2017). This means we must provide exceptional experiences, consistently. We will do this through strong leadership, the continued nurturing of a customer focused culture and continuous improvement and service innovation.

#### How our customers' views have shaped the plan

In 2016, as part of the development of our Unrivalled Customer Experience strategy (2015), we asked our customers, including many who needed additional help and support, what an unrivalled customer experience meant to them.

**A** See Appendix 1.2

They told us it means:

- Making their life easy by services being fast and simple to use;
- Showing each customer they are special;
- Taking ownership of problems;
- Keeping our promises; and
- Promoting the great work we do locally – such as school engagement, environmental projects and charity work.

#### Ofwat IAP test areas

- EC** Engaging customers
- OC** Delivering outcomes for customers
- CMI** Targeted controls, markets and innovation

**£36m**

we have invested £36m in cultural, operational, technological, and digital change

**+70**

we aim for a world class NPS score of +70

We have continued to engage with our customers and work with them to shape many elements of service since launching our Unrivalled Customer Experience strategy, in order to drive even higher levels of customer satisfaction.

#### What our plan will deliver for customers

##### Getting to world class customer service

We will use the NPS to help us achieve our ambitious goal to deliver world class customer service. The NPS is an internationally recognised benchmark that allows us to look beyond the sector, with a particular focus on businesses that routinely achieve world class NPS scores of +70. So for example we look at Apple for quality of experience and service, Amazon for ease and speed of service, and Premier Inn for consistency. This allows us to continuously stretch our ambition and the level of innovation when it comes to customer service.

As part of this approach we will horizon scan for examples of excellence in world-wide customer service and will carry out an annual review to make sure that we understand what excellent customer service looks like. We intend to carry out a full refresh of our Unrivalled Customer Experience strategy in 2019 to make sure that we remain best positioned to deliver world class customer service.

We will also continue working with the ICS on an ongoing basis, using their research and insights into future trends to inform improvements to our own services.

By 2020 we will have completed the largest transformation ever undertaken across our customer facing operation, with investment of almost £36m in cultural, operational, technological, and digital change, through our ONCE programme. Our new Customer Experience Platform (CEP) and Customer Care and Billing (CC&B) systems use intuitive technology to identify who is calling, allowing customers to be instantly routed to the right team (the CEP that we installed is the same as is used by both Apple and M&S).

For customers in financial difficulty this means easy access to our arrears support team who can quickly advise on our range of social tariffs and support. The technology also promotes ownership and a personal service, which our customers tell us they want, and can route contacts to the same specialist who has been handling their query.

New digital platforms, apps and innovations currently being developed under our 'Think Digital' initiative to improve online and mobile experiences complete this technological investment. This will create solid foundations for us to build our future operation in an agile and customer focused way.

## **3.1 Unrivalled customer experience** continued

### Outcome 1 continued

#### Business plan priorities

Reflecting what customers consistently tell us about service, we will carry out the following activities in 2020-25.

#### Make life easy for our customers

Customers will only ever have to contact us once. Wherever possible we will resolve issues as soon as we are told about them, and if we need more time we will keep customers informed until everything is fully resolved. We will anticipate issues before they occur and make sure customers are confident that we are managing their issues proactively.

Our Think Digital initiative will provide intuitive and engaging digital experiences for all of our customers. From 2020, our new digital platforms will be fully embedded, providing customers with comprehensive self-service functionality across their devices, mobiles and wearable technology. Our new platforms will allow customers quick and easy access to information and a range of support channels.

Our new systems also offer enhanced communication tools including management of social media, web, call recording, intelligent routing of customer calls, inbound and outbound calls, text and email.

We are delivering this programme in collaboration with cutting edge technology and customer experience companies. We will continue to invite customers to shape this transformation programme so that we keep their needs at the forefront of our thinking. We plan that by 2022, 50% of our customer interactions will be self-served via digital channels. We will continue to build on this as technology develops.

Making our customers' lives easier means going beyond our core services to add value in new ways. We will look at possible opportunities to offer unrivalled home experiences and home management style services, which would include bundled services such as billing for gas, electricity and broadband. These services would be available through a 'one-stop-shop', giving our customers more control and saving them money.

We will share intelligence about our customers who need extra support with partner organisations such as other utilities, public sector organisations and charities, when customers have given their explicit consent for this to happen. This will minimise their need to tell multiple organisations that offer similar services and support.

#### Ofwat IAP test areas

- EC** Engaging customers
- OC** Delivering outcomes for customers
- CMI** Targeted controls, markets and innovation

# 50%

by 2022, 50% of our customer interactions will be self-served

We are already working with British Gas, SGN, UK Power Networks, Northern Powergrid, Northern Gas Networks and the Utility Networks Partnership, as well as with other water companies, to identify the best and most secure way to share this information. By 2020, our aim is to increase awareness of the additional support we offer, increasing the number of customers who are registered for Priority Services from 2.5% to 7%, then maintaining numbers at 7% as a minimum.

We value the diversity of our customers and will make sure that we will always protect their choice to have conversations and face-to-face interactions with us.

Making life easier for our customers includes our commitment to go above and beyond what we are accountable for, whenever that support can help make a positive difference. So for example, when flooding or leaks occur that are another organisation's responsibility, we will be proactive in making sure that the third party that is responsible is aware. This could include organising a site visit with those involved in order to help resolve the issue as quickly as possible. For customers who need extra support, we will champion their concerns until they are resolved, should they wish us to do so.

Customers will be able to choose how they contact us, and will enjoy a seamless experience across all channels. For example, customers can start their journey with us on Twitter, move to livechat, then finish their journey with a call to one of our specialists, without ever having to repeat any of their information.

Our recent multi-million pound investment through our ONCE transformation programme in a new billing and contact system and state-of-the-art experience platform allows us to do this. We are continuing with our investment in new asset management systems through IAM. When all of these systems are fully integrated we will be in a leading position to deliver the most personalised customer experience in the industry.

**242** To find out more about our IAM project, see Section 7.1

#### Show each customer they are special

Our people are our biggest asset when it comes to delivering unrivalled customer experiences – we recruit for the right attitude and an obsession with amazing service first and foremost. We will continue to invest in our talent so people are equipped with exemplary service skills. We believe emotional intelligence is key to enabling our people to tune into our customers' needs. We do our research carefully and work with the best organisations when it comes to developing our people.



## 3.1 Unrivalled customer experience continued

### Outcome 1 continued

We have strong relationships with several world class organisations that work with companies like Lego, such as Chimp Management, Roche Martin and Stephen M R Covey in delivering our extraordinary leadership strategy.

**A** See Appendix 3.1

Data science and technology are critical in enabling us to develop insights and closer relationships with our customers. As we move into 2020-25, our leading edge technology and insights expertise will allow us to anticipate an individual customer's needs, offer services that are most relevant to them and provide support for customers who move into circumstances that mean they need extra help. Having information at our fingertips that shows a customer's full contact history will mean our response can be personalised and appropriate.

We are starting to unlock the value of data to provide our customers with personal services that reflect their preferences, choices and expectations. We will build further on our use of data, analytics and data science to help us deliver our ambitious goal of providing world class customer service.

We are hosting hackathons and open innovation events to explore how data can help us make step changes in delivery. We already use data as an asset in real-time and predictive ways to significantly improve the customer experience.

An example of this is our use of 'social listening', a technique to identify relevant conversations on social media. Some of the potential benefits include that we are alerted to operational issues more quickly, and are then able to provide water-related advice and guidance from a position of trust.

Traditional social listening is based on using keywords to identify posts that may be of interest. The results are often very mixed as no account is taken of the way in which words are used in a sentence. We have therefore been working with linguistics experts at 'Wordnerds', part of Daykin & Storey, to trial an AI engine to analyse the context and meaning of words in tweets and to identify the likely location of a user. Early indications from this trial are that we achieve significantly higher engagement rates than usual when we get involved in conversations through this kind of social listening.

#### Own our customer's problem and get things sorted quickly

We will deliver leading water and wastewater service levels across all channels and will have the fastest response times across the sector – be it phone, written or field activity. The investments we have made and will continue to make in technology, including asset management, mobile and digital will help us to do this.

#### Ofwat IAP test areas

- EC** Engaging customers
- OC** Delivering outcomes for customers
- CMI** Targeted controls, markets and innovation

### Investing in extraordinary leadership

**To achieve our vision of delivering unrivalled customer experience and to be the very best we can be, we strive to create a culture of high performance, innovation, safety, empowerment and inclusion through a leadership population with a high degree of emotional intelligence (EQ).**

In 2015, we introduced the concept of EQ to our leadership population as a 'game changer' for employee engagement and delivery of exceptional customer service.

Eighty senior leaders have already participated in EQ 360 assessments and throughout 2018 and 2019 this exercise will be repeated and extended to all leaders with line manager responsibilities. These assessments will continue with developmental support on a regular basis and will be revisited every two years.

In June 2017, we launched our 'Extraordinary Leaders Programme', an 18-month senior leadership development programme to enhance EQ competency. The programme comprises a number of activities including leadership events (Labs and Micro-Labs) and coaching.

Our Leadership and Management Development Programme brings together both the technical element and the people element of leadership and management. It provides a holistic development experience that will enable our line managers to lead and manage their people with confidence, while delivering a great place to work for our employees and unrivalled customer experiences for our internal and external customers.

We have set our standards high as an aspirational target in order to meet the ambition of being an extraordinary company benchmarking ourselves with 7,000 leaders across 11 regions of the world.

We are already starting to see results with our Employee Engagement Index score increasing from 73.8% (2016) to 80% (2018) – demonstrating we are on target to achieve a 2 star rating in the best companies list.

## 3.1 Unrivalled customer experience continued

### Outcome 1 continued

As part of our efforts we are bringing in senior level customer service expertise from other sectors, substantially reinforcing our leadership team. For example, we have recently appointed a Digital Experience Manager to support the next stage of our transformation and implementation of new digital platforms.

We have set standards of service for 2020-25 which at least match the standards provided by others both inside and outside the sector, including OVO, First Direct and Virgin Money.

As a result, during the period 2020-25:

- We will answer 95% of calls received within one minute, ensuring our customers' valuable time is not wasted;
- We will resolve more than 80% of our contacts right first time;
- When we receive complaints we will respond to more than 90% of them within one day;
- We will respond to all internal sewer flooding incidents within two hours of them being reported and attend all external flooding incidents within four hours;
- We will reduce the number of written complaints we receive by 50% by 2025 from already very low levels;



- We will continue to invest in new workforce management tools and field equipment, so that our people have all appropriate customer information accessible to them when working across our operating areas; and
- We will continue to introduce specialist teams where we can see service and efficiency benefits for our customers. We know that some service issues such as high consumption queries and sewer flooding can be complex to resolve. Specialist teams can make the process easier for customers, by keeping them informed as the issue is resolved.

#### Keep our promises

To demonstrate our commitment to keeping our service performance promises we will offer fair, fast and free from hassle compensation where we fail to live up to our promises. This guarantee will underwrite our service standards, sitting alongside and often enhancing the Guaranteed Standards Scheme (GSS) payments.

#### Ofwat IAP test areas

- EC** Engaging customers
- OC** Delivering outcomes for customers
- CMI** Targeted controls, markets and innovation

**95%**

we will answer 95% of calls received within one minute

**80%**

we will resolve more than 80% of our contacts right first time

### New technology brings faster service to customers

We have recently launched a new app, **Utileyes**, that helps us 'see through the eyes of our customers'.

When customers call to report a problem or ask for an inspection, we ask if they would like to download our bespoke app, which allows us to temporarily access their smartphone camera (with their permission) to see what the customer is looking at.

This often removes the need to send a technician to make an initial assessment, speeds up the time it takes to resolve the customer's issue and means that the crew that is ultimately dispatched knows in advance what work needs to be done.

The app is being primarily used for virtual trench inspections with plans to use the app in future for leaks/bursts, stoptap locates and defective covers. This industry-leading technology helps reduce the number of visits we make by around 20 a month and is set to become our preferred method for carrying out virtual inspections.

The app recently won the Water Industry Awards Customer Service Initiative of the Year in the category of 'breakthroughs in customer satisfaction'. This is defined as 'being prepared to go the extra mile to ensure that customers receive the service they expect'.

# 3.1 Unrivalled customer experience continued

## Outcome 1 continued

We will review our standards of service every year to make sure they reflect what is important to our customers, as well as best practice across the sector and more generally across the service industry.

We plan to introduce a new suite of standards covering our water, wastewater and customer services that recognise material or multiple minor failures. For these failures we will refund the service charge for that period, as well as making goodwill payments for any inconvenience we cause. We will do this proactively, without customers having to ask.

### Keep it local

Communication works best when messages are personal. Our customers tell us that having a local identity for their water company is important to them, whether that is at a regional or community level.

Our customers are keen to understand the difference we make for them at a local level so we tailor our communications to be relevant and meaningful to everyone we serve.

**67** We provide more information about our awareness raising and customer participation activities in Outcome 2

## Our performance commitments

### From 2020 we will measure customer service in the following ways:

- The customer measure of experience (C-MeX); and
- Our response time to written complaints.

Further information about our services for developers and the developer services measure of experience (D-MeX) are included in the section that follows.

### Customer experience (C-MeX)

We will use C-MeX to assess the satisfaction of our customers with the services we provide. C-MeX has evolved from the current Service Incentive Mechanism (SIM).

We are not required to set PCs for this measure. In 2020-25, performance will be assessed at the end of each year based on how we compare with the rest of the industry.

In line with our strategy to deliver an unrivalled customer experience, our commitment is to aim for an industry leading position by 2020 and to maintain this in the years beyond.

### Ofwat IAP test areas

- EC** Engaging customers
- OC** Delivering outcomes for customers
- CMI** Targeted controls, markets and innovation

**90%**

we will respond to 90% of written complaints within one working day

## Response time to written complaints

Our customers tell us that the speed with which we respond to complaints and the way in which we communicate is more important to them than minimising incidents. As a result we have introduced this new, bespoke measure.

We carried out a review of best practice for complaint response from inside and outside of the sector including service providers such as Virgin, OVO and First Direct.

We are committing to respond to a minimum of 90% of written complaints within one working day. We view this as a frontier level of performance.

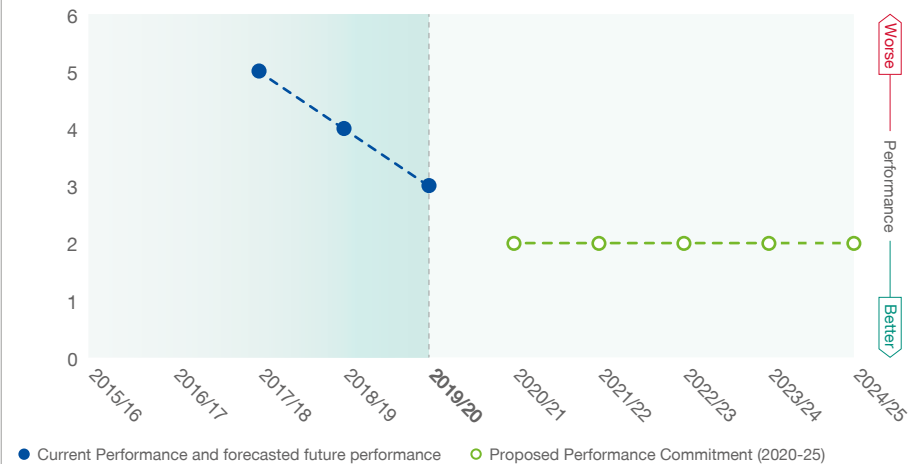
To encompass this level of service and maintain a focus on those complaints that are complex and cannot be responded to within one day we have set our PC to reduce the response time to written complaints from an annual average of five working days (2017/18) to two working days for the 2020-25 period.

We will aim to reduce this further to 1.3 working days by 2035. We believe this will be leading in this performance area.

To support the achievement of this we will not only focus on a more rapid response but will also commit to reduce our written complaint numbers by 50% by 2025.

### RESPONSE TIMES TO COMPLAINTS

Time taken to respond to a customer's complaint (days)



## **3.1 Unrivalled customer experience** continued

### Outcome 1 continued

#### Services for developers

Our long-term strategy is to provide unrivalled customer experiences for the full range of our developer customers. This includes major volume home builders, SMEs and one-off developers (which may include household customers), commercial development companies, NAVs and self lay providers (SLPs).

Our approach is to provide consistent service throughout the whole life cycle of a project. As part of this we recognise that a developer's supply chain partners (which includes planning and engineering consultants and groundwork contractors) should also enjoy an unrivalled customer experience in their dealings with us.

To fully understand the needs and priorities of each developer sector, we led and participated in a number of engagement events, including:

- Driving and shaping future infrastructure policy at a national level with Ofwat, Defra and the Cabinet Office;

- Contributing to the Defra Task and Finish groups set up to consult with the sector and implement new developer services charging arrangements;
- Working with Ofwat, developers, SLPs and NAVs in the development of the D-MeX system which places emphasis on the aspect each type of developer actually values; and
- Hosting two co-creation workshops to test what developers currently value about our service, identify areas for improvement and examine how we can provide an exceptional customer experience for developers.

#### How the views of our developer services customers have shaped the plan

Our developer customers who attended our co-creation workshops (2018) told us that they particularly valued our face-to-face engagement with them at trade body and planning meetings. This is reflected in other feedback from developers, who welcome in particular our approach to collaboration during the full development cycle. Participants also valued having knowledgeable and approachable employees within our Developer Services team.

Our customers told us that areas for improvement included making sure that we provide a consistently good service across all of the teams our developer customers interact with. Also important was the need for greater transparency in our cost estimations and greater flexibility in the resources we have in place to respond to development activity. Customers told us that they would like to see an improvement in the timescales that we promise for a range of activities, from pre-development enquiries to the technical vetting of sewers to be adopted.

Several of the suggestions developers raised for the delivery of an unrivalled customer experience related to making sure that sufficient resources are in place. A suggestion from our customers to address a number of these priorities was to introduce key account managers who would provide a single point of contact for customers. This would also mean that the workload from that customer could be prioritised according to their needs.

#### Ofwat IAP test areas

- EC Engaging customers
- OC Delivering outcomes for customers
- CMI Targeted controls, markets and innovation

Other qualitative assessments and perceptions that some of our developer customers shared included:

- Developers like our open door policy and find our people approachable, knowledgeable and solution-focused;
- They would like a dedicated account manager for all services, regardless of where their issue is within our business;
- They feel we might benefit from more resource in our water mains design and sewer adoption functions;
- The Developers' Charter has reduced our ability to meet their priorities;
- Using timescales that reflect the minimum legal requirement (as set out in the Water Industry Act) does not reflect developer priorities; and
- We could make self-laying water mains in our area easier for developers.

## **3.1 Unrivalled customer experience** continued

### Outcome 1 continued

#### What our plan will deliver for customers

The introduction of D-MeX offers the opportunity to break away from legislative targets and industry norms. We will use this opportunity to make sure that we provide our developer customers with an industry-leading, bespoke service that directly responds to their needs and priorities.

In response to our customers' feedback on delivery timescales, we will set more ambitious internal targets to consistently achieve 100% compliance for Developers' Charter levels of service. We will aim to halve the current time taken to issue a water service quotation and to complete water service connections. We will also reduce average job times year on year.

The ambitious job time targets will be achieved by increasing the resource flexibility in our supply chain and by developing the way in which we prioritise jobs within our planning and scheduling systems. We have put in place the additional internal resources we will require to deliver the commitments in this plan.

Each customer will have a dedicated account manager as a single point of contact. The role of the account manager will include:

- Providing the developer with regular updates on how we are performing against levels of service for their organisation;
- Providing progress updates on the delivery of major projects such as diversions, requisitions and STW upgrades;
- Supporting the management of any objections from members of the public or other stakeholders based on perceived incapacity within our infrastructure, including agreeing our attendance at consultation events and planning committees;

#### Ofwat IAP test areas

-  Engaging customers
-  Delivering outcomes for customers
-  Targeted controls, markets and innovation

# 100%

we will aim to consistently achieve 100% compliance for Developers' Charter levels of service

- Making sure that we have the earliest possible line of sight of the timing and location of new sites to identify any collaborative flood risk management opportunities;
- Driving continuous improvement through shared learning and feedback;
- Completing post-project reviews for capital schemes to enhance the current asset delivery processes, focusing on delivery timescales, cost and quality;
- Making sure that our NAV and SLP customers receive equally unrivalled levels of service and support as those that are experienced by other developer customer groups;
- Acting as the central point of contact for major commercial customers with regards to infrastructure capacity and connection costs; and
- Agreeing flexible payment options which enable seamless service delivery.

The unrivalled customer experience provided by the account manager will be complemented by significantly improving the digital experience that we provide, especially where our developer customers wish to self-serve. Options will include the ability for customers to build their own quotations online, select a preferred date for the work to take place, and receive automated updates on progress.

Considering the development cycle as a whole, we will further develop our approach to customer participation in the planning process. We already enjoy strong relationships with developer customers and local planning authorities in our operating areas. This provides the foundation to align infrastructure to support growth in a sustainable manner. It will also ensure that we can provide the highest levels of certainty and service to our developer customers as sites come forward for delivery.

## **3.1 Unrivalled customer experience** continued

### Outcome 1 continued

The expansion of this 'growth ready' approach will include assessing each of the allocated sites within the Local Plans across our regions and providing developers with a capacity and constraints report that can be downloaded from our systems. The report will set out likely infrastructure costs, discharge rates and connection points. This will greatly improve the ability of developers to bid for land as they would know the cost of infrastructure connections, any site constraints caused by our infrastructure, and the likely range of abnormal costs.

We will also make sure that our Drainage Area Studies are updated with those sites newly identified in local plans to support our responses to pre-development enquiries. We have begun to refresh the models so that we can produce high-quality pre-development enquiry responses within the levels of service.

Responding to feedback regarding cost certainty and transparency, we will make sure that we meet the timescales in which developers require this information. We will also put the necessary resources in place to produce high-quality, robust and reliable responses.

### Supporting sustainable growth through collaboration

In an industry-leading approach to the delivery of infrastructure to support development, we worked closely with Northumberland County Council and our developer customers to deliver a sustainable, future-proof approach for serving a development of 2,000 new homes in north Morpeth.

**As a collaboration we devised a drainage master plan that used the route of the Morpeth Northern Bypass and planned trunk road to construct a strategic sewer. The sewer serves all of the sites identified for development and allows for further development as it is needed.**

The approach was strongly supported by our developer customers as it delivered significant cost savings for the drainage of their housing schemes.

The strategic sewer also means that there was no increase in the risk of flooding for the town centre. This helped to support the development proposals through the planning process and enable sustainable growth.

The project won the Royal Town Planning Institute North East Award for Planning Excellence, where it was noted that the project highlighted what can be achieved through real collaborative planning and was a model of best practice for infrastructure delivery nationwide.

#### Ofwat IAP test areas

- **EC** Engaging customers
- **OC** Delivering outcomes for customers
- **CMI** Targeted controls, markets and innovation

### Our performance commitments

D-MeX is a new common measure that assesses the customer experience of developer services customers. The financial incentive for D-MeX will be based on feedback from a regular qualitative satisfaction survey and on a quantitative measure of water company performance against a set of key metrics. The metrics will be based on Water UK's existing metrics of service levels for developer services customers.

The PR19 methodology sets an expectation for companies to achieve upper quartile in this measure. We aim to be leading in this measure by 2020 and to maintain this position in the years beyond.

## **3.1 Unrivalled customer experience** continued

### Outcome 1 continued

## Non-household customers, retailers and new appointments and variations

### Introduction

The new non-household water retail market opened on 1 April 2017. At that point responsibility for the primary non-household customer service relationship was transferred to retailers. This change in the market created a new set of stakeholders for us.

To ensure effective engagement we created a dedicated account management team for retailers. The team worked with retailers before market opening and have continued to work closely with them since. This has enabled us to gain a good understanding of retailers' needs.

Another key stakeholder group for our business is the companies that are NAVs. NAVs have a key role to play in the development of competition in the English water industry, affording competition in the wholesale environment. We therefore included NAVs in the survey work carried out on our business plan proposals and considered their views expressed as part of our regular engagement process. We currently have four active NAVs and their views are vital in determining our approach in this important aspect of market development.

The new market is still very much in its formative years and we recognise the need to maintain active and close engagement. This will allow us the flexibility necessary to change our service offerings as the market develops.

#### Ofwat IAP test areas

- **EC** Engaging customers
- **OC** Delivering outcomes for customers
- **CMI** Targeted controls, markets and innovation

### How non-household customers, retailers and NAVs have shaped our plan

We recognise that the success of the new market is highly dependent on customer engagement.

Before the new market opened we carried out a comprehensive programme of campaigns designed to heighten awareness of the forthcoming changes for non-household customers. We consistently scored above the rest of the industry in market awareness surveys. This was evidenced by the scores that we received in Ofwat's 2016/17 Customer Awareness Survey, where 63% of our customers stated they were aware of the changes to the retail water market ahead of the change in April 2017.

Our own customer survey work carried out in November 2017 showed market awareness of just under two-thirds. While this level is high compared with national surveys, we still wish to reach the final third and the position does not appear to have moved on by very much since the market opened.

To reach full awareness we are committed to further communications campaigns. This will involve targeted communication, enhanced website information with downloadable content, and market awareness seminars.

Key findings from our survey research are summarised below:

- When they were asked which single thing they thought their wholesaler could do to improve, 42% had suggestions to make. Drinking water quality was the top concern, and water pressure and maintaining drains and sewers were of importance to some. While 5% referred to lower prices, more had comments to make about clarifying how the market works and promoting exactly what it is that the wholesaler is now responsible for;
- Just under two-thirds of customers said they were aware that they can choose their water and wastewater supplier. Even among those who were aware of the new market arrangements, however, understanding of how the wholesale and retail split works is relatively low. Nearly half of all respondents, and a fifth of those aware they can now choose supplier, gave low scores of 0-4 out of 10 on how well informed they feel about how the market works; and

## **3.1 Unrivalled customer experience** continued

### Outcome 1 continued

– Throughout the survey, we looked for evidence of perceptions varying by industry sector and/or company size. Interestingly, there were few statistically significant differences here. This indicates that experience of water supply and wastewater service is fairly consistent across the non-household market. Organisations that use water for purposes other than just domestic-type uses are more likely than the rest to say that their satisfaction with their wholesaler has decreased over the last year, but there are no other indicators of sector or size difference.

We commissioned an independent survey of our retailers (2018) to gain an understanding of their needs and aspirations. Additionally, we have independently engaged with them on key aspects of our plan.

This engagement helped shape our plans and has shown us that overall perceptions are positive. Specific points from the survey are:

- Overall perceptions are positive, with two saying that they would be very likely (9/10 rating) to recommend, and none giving a score of less than 7/10;
- Feedback on the service that our account managers provide is excellent, with more than half who provided a score giving 10/10, and no retailer providing a score of less than 8/10; and
- Half of the respondents we spoke to (6 of 12) said they had some experience of using our Retailer Portal; two of those who have not used it think they have not yet received their log-in. On this issue, a number of retailers would like to see improvements in the process for bilateral communication. The suggestion has been made that users are given an application programme interface that automatically updates each others' system, rather than having to log in and re-key information through the portal.

#### Ofwat IAP test areas

- **EC** Engaging customers
- **OC** Delivering outcomes for customers
- **CMI** Targeted controls, markets and innovation

In addition to routine engagement, we commissioned an independent survey of our NAVs (2018) to gain an understanding of their needs, aspirations and business plan feedback.

Our engagement with the NAVs revealed that their main areas of interest are that:

- NAV charges should be transparent and clear;
- Applications should be processed in a timely and effective way; and
- Planned and unplanned interruptions should be managed well.

This feedback has shaped the proposals in the plan.

### What our plan delivers

Our strategy is to deliver an unrivalled customer experience for all of our customers. This applies for our household customers, non-household customers, NAVs and retailers alike. We will treat all customers the same for the customer service functions that they still directly receive from us. For example, in the case of an issue with no water or a water quality issue, customers still contact us directly. This means that a great deal of our business plan for household customers remains highly relevant to our non-household customers.

That said, our plan has been shaped by the specific feedback we have had from retailers on areas of importance to them. As noted earlier, we expect to make further changes as the market evolves and we will work proactively with retailers to maximise the efficiency and accuracy of the new processes.

The key outcomes for our non-household customers, NAVs and retailers will be covered by the following commitments:

#### Full awareness of the market

Recognising the importance of market awareness we have set ourselves an ambition to make sure that all of the non-household customers that we provide services to are aware of the market and are confident about engaging with it should they wish to do so. This will present all of our customers with the chance to share in the benefits afforded by the competitive market.

We will also work to engage and interact with all retailers to successfully deliver our obligations to non-household customers and retailers alike.



## **3.1 Unrivalled customer experience** continued

### Outcome 1 continued

#### Efficient and accurate services

Our plan will deliver consistent, efficient and timely services either directly to the customer or on their behalf through their chosen retailer.

#### We will work to effect industry standardisation

For non-household customers to receive the very highest levels of service wholesalers need to have established, proven and efficient working practices and relationships in place. Similarly, national retailers have to interact with multiple wholesalers which requires them to be conversant with multiple different policies and procedures; including variable terminology for similar or identical items. This can create confusion among wholesalers and customers.

We are committed to engaging with other wholesalers to standardise policies and processes where possible and to work towards agreeing a common nomenclature on a national basis. This will allow retailers to deliver efficient and consistent services to non-household customers and will make their interaction with wholesalers more efficient. This process will see us take part in, and contribute to, industry-wide working groups that will assess and agree standardised approaches where practicable.

#### Streamlined communications

Retailers are currently required to interact with wholesalers through a range of 'portals' or structured, form-based mechanisms for the majority of operational requests. For retailers this is highly inefficient and they would like the portals to be easy to use or, better still, for there to be a common, central bi-lateral communication solution in place. We will tackle this feedback in two ways. We will continue to develop our existing retailer portal in response to feedback and will continue to support and promote the development of a central solution.

#### Ofwat IAP test areas

-  Engaging customers
-  Delivering outcomes for customers
-  Targeted controls, markets and innovation


**Our aspiration is to be the industry leader for data quality.**

We have already introduced push notifications to our existing portal and will shortly be introducing greater flexibility over the number of allowable log-ins. More strategically we are firmly behind a national solution and through our representation at the Digital Strategy Committee are actively working with the rest of the industry on an innovative and flexible solution. We envisage a solution emerging within the next 12 to 18 months.

#### We will be transparent and drive clarity of information

A key aspect for efficient interaction with retailers is the provision of transparent and clear information. Going forward we will seek to consult and engage with retailers on the specific wording of all relevant policies and procedures. This will ensure that our approaches are clear and understood by retailers. Training and update seminars will be held on webcasts so that retailers can interact with us easily on an ongoing basis.

#### Leading data quality

We completed a significant programme of data cleansing prior to market opening but it is clear from retailer feedback that any errors or anomalies can cause retailers significant problems. We will monitor and record all data item corrections and will aspire to be the wholesaler with the lowest number of data errors. Our aspiration will be for a zero data error count and to be seen as the industry leader for data quality. Where errors are found we will investigate and correct these errors at performance standards better than the codified standards.

#### NAVs

NAVs are a key element in the development of competition within the water sector. In order to facilitate this development we must ensure that our interactions with NAVs are efficient, supportive and effective.

## **3.1 Unrivalled customer experience** continued

### Outcome 1 continued

We have engaged with our current NAVs to fully understand their requirements and views on our plans. Key to shaping this aspect of the plan has been the feedback from NAVs on where we can improve our service to them. Specifically, we have targeted the areas where they have indicated they have the main issues.

Ofwat has recently finalised its guidance on NAV charging. We are currently in the process of finalising the changes we wish to make to the draft bulk charges for NAVs that we published previously. We will provide a clear indication of our charges and how the charges are made up. It is essential that the basis of our charges is clear, in order to allay any concerns that NAVs may have about whether or not their charging is fair relative to the charges we make for developers that deal direct with us. Providing this level of clarity will give assurance to NAVs that we are undertaking a fully transparent approach.

#### Ofwat IAP test areas

- EC Engaging customers
- OC Delivering outcomes for customers
- CMI Targeted controls, markets and innovation

## 8/10

we will aim for an overall retailer satisfaction score of 8/10

We have moved responsibility for managing our NAV accounts within the central wholesale team. As a result our NAV customers will benefit from the account management processes that are provided to retailers.

Although we have not had any problems with our account management for NAV customers in the past, we are now able to track and manage applications, and manage unplanned and planned events in a more streamlined and consistent way. Each NAV will be assigned to a nominated account manager who will have direct responsibility and accountability for the service that we provide. Regular liaison meetings will also be instigated so that service provision standards are maintained. We envisage that this more direct approach will actively encourage approaches and engagement with NAVs.

### **Our performance commitments and how we will measure performance**

Our approach for non-household customers, retailers and NAVs covers the following performance commitments, in addition to those covered earlier in this section, which apply to all customers.

#### **Market awareness**

Our performance commitment is to have more than 95% of non-household customers in our area aware of the new retail water market by 2022. This will be assessed by reference to external survey sampling.

#### **Service level and efficiency**

We aspire to be the industry leader for our performance in the Market Performance Standards (MPS) and Operational Performance Standards (OPS).

MPS define varying levels of underperformance in relation to a number of market processes, where any such underperformance is likely to have an adverse impact on the orderly operation of the market and/or the accuracy of the settlement process.

This includes areas such as partial registration, new connections and late or missing meter reads. OPS includes standards in relation to: the timely completion of operational processes in accordance with operational terms such as quotation times for new connections; meter install times; and complaint response times. MOSL publishes performance reports every month.

We will not be content with meeting the required standards, and where practicable will seek to outperform them. This will be based on our performance relative to our industry peers. Specifically we will seek to maintain a performance level above 95% for all standards and to be the industry leading performer overall. We would seek to attain this level of performance by 2021 and to maintain it after that.

#### **General retailer engagement and satisfaction**

We will seek to gain an overall retailer satisfaction score of greater than 8/10 for service. This will be measured by reference to independent survey work carried out approximately every 18-24 months.

# 3.1 Unrivalled customer experience continued

## Outcome 2

Our customers say they feel informed about the services we provide and the importance of water.

### Why this outcome is important

Our ambitious goal is to give every single customer the opportunity to have a strong voice and engage with us, with 2m customers participating by 2025.

We want our customers to actively take part in shaping the future of their water and wastewater company. We know that when they do, they have higher levels of trust and confidence not only in our business but also in the wider water sector. This is another reason why we continuously nurture a culture of customer participation across our business.

Well informed and engaged customers are vital for customer service quality. When customers know what to do and why they should do it they are much more likely to make informed choices and to adopt positive behaviours such as using water more efficiently, reporting leaks and not causing blockages. This results in less frustration, which in turn leads to greater customer satisfaction. Therefore behaviour change programmes, designed by customers for customers, are critical to delivering good service outcomes for customers.

### How our customers' views have shaped the plan

During our 2018 customer engagement workshops on our long-term strategy, most customers in attendance agreed that we should give greater control to customers in our decision making. This has helped shape our ambitious goal for customer participation.

#### Ofwat IAP test areas

- EC** Engaging customers
- OC** Delivering outcomes for customers
- CMI** Targeted controls, markets and innovation

**“Every single customer will have the opportunity to have a strong voice.”**

Our PR19 customer research, participation and engagement activity began in 2016 with Defining the Conversation. This customer engagement project aimed to understand the role our customers want to have in shaping different aspects of our services. Our customers told us that we should engage with them to understand their views on customer service, value for money and trust.

We appreciate that the majority of customers have low interest in engaging with us to shape our services. This means that it is important that we create innovative and customised engagement opportunities that motivate our customers to participate.

### What our plan will deliver for customers

#### Embedding customer participation

We are firmly committed to customer participation. This section sets out our plans to take this even further, so that customer participation is an instinctive part of how we do business.

Customer participation helps to unlock value, build trust and enact behaviour change. This is an approach we have followed for some time. We fully support the view, as set out in the Tapped In report (Ofwat and Corporate Culture, 2017), that customer participation taps into a wider movement to connect people to the things that matter in their lives, giving them not only a voice but also more control.

Traditional approach (old)	Co-creation (now)
Passive input	Active change agents
Listening	Dialogue
At the receiving end of decisions	People as innovation resources
Researching need	Understanding experiences
Reliance on 'experts'	Real insight from people who matter

Over the past two years we have worked with Corporate Culture, a leading consultancy in the customer participation field, to embed a culture of participation across the business. We used Ofwat's FACE model as the framework and our discussions focused on where we could make the biggest difference to customers.

## **3.1 Unrivalled customer experience** continued

### Outcome 2 continued

We published a report on our customer participation journey at the end of 2017: 'From customer consultation to a culture of customer participation'.

**A** See Appendix 1.2

In the report we shared examples of our ground-breaking participation work and our plans to take a collaborative approach as we define, as a sector, what leading customer participation should look like. By publishing our report at that stage of the journey we demonstrated our leading ambition and commitment to customer participation.

Since we published our report, we have evolved our research and engagement strategy to include many opportunities for customer participation.

We reviewed our plans once again with Corporate Culture in a business-wide workshop in April 2018. We are looking beyond the sector and indeed globally for examples of brilliant customer and community participation. We are working hard to make customer participation part of our culture and something that is a given when it comes to our future. Our focus has led us to develop a much deeper understanding of the behavioural levers that evoke participation.

“ In my view, Northumbrian Water is genuinely committed to increasing customer participation – a commitment that preceded the Tapped In report. Some of your customer participation programmes are genuinely industry-leading. In particular, the Innovation Festival is an example of open innovation that sets a standard for the sector. Your actions linked to customer participation show a humanity that has often been lacking in the sector – a desire to just talk to people, understand them on their terms, listen and then act on what is heard. ”

**John Drummond**  
Corporate Culture

#### Taking our approach even further

Customer participation is core to the way we develop our services and encourage behaviour change. We have set ambitious targets to make this happen.

- Our ambitious goal is to give every single customer the opportunity to have a strong voice and engage with us, with 2m customers participating by 2025; and
- By 2035 we will increase this target to 3m customers annually.

#### Ofwat IAP test areas

- EC** Engaging customers
- OC** Delivering outcomes for customers
- CMI** Targeted controls, markets and innovation

The number of customers who have engaged and participated with us will be captured on an ongoing basis. Progress towards this goal will be monitored and reported on through our internal scorecard and will be published externally on an annual basis.

We have developed our own bespoke customer participation ladder to help us reach our ambitious goal (see Figure 5, next page). This was informed through research into participation beyond the water sector. The ladder has five rungs, each of which represents a category of participator who gets involved in different types of activity. Higher rungs represent increasing levels of engagement and more meaningful participation.

The concept of the ladder provides a participation framework that will allow us to deepen our relationships with customers. Our aspiration is to engage with a wide range of customers at the lowest rung, and build on this engagement to support customers to climb to higher rungs where they actively participate and have a stronger voice.

We will make sure that the customers who actively participate will be representative of the diversity of people we serve. At the PR19 customer workstream workshop with our customers in August 2017, we explored how they thought we could achieve this. As a result, we now have a range of approaches to use in the future to make sure that our customer participation is always inclusive – whether that is face-to-face or in a digital environment.

Our plans include:

- Crowd sourcing ideas and solutions;
- Offering apps for customers so that they can provide information and engage online;
- Real time feedback; and
- Greater connection through our online communities and through wider use of our customer engagement vehicle 'Flo'.

We are currently reaching around 1m customers in these ways each year, and expect to increase this figure in 2018 and beyond.

To drive forward our collaboration with communities across our regions in an inclusive way we have created a new role, a Customer and Communities Collaboration lead. Their responsibilities include coordinating our #wearefamily gatherings, a unique initiative that is described in Section 3.6.

# 3.1 Unrivalled customer experience continued

## Outcome 2 continued

We are also working with our employees to make sure that our customer participation strategy is embedded across the business. For example:

- We will take opportunities for customers to solve other customers' problems. This approach is used by other businesses, including the mobile phone company Giff Gaff, and requires employees to work closely with customers to co-create solutions;
- We will continue to build on our strong track record of delivering innovative solutions using design sprints with academic institutions such as Northumbria University whose students helped us to develop Flo, our customer engagement vehicle; and
- We will continue to use our Leadership Conferences as a twice yearly opportunity to bring our senior managers together with our customers to work collaboratively on issues such as the presentation of our plan.

These initiatives will be supported by detailed internal and external communications plans. In this way we will share stories with our customers and our employees about customer participation, recognise those employees who promote customer engagement, and share the positive impacts that active involvement has had on service delivery.

- Ofwat IAP test areas
- EC** Engaging customers
  - OC** Delivering outcomes for customers
  - CMI** Targeted controls, markets and innovation

**FIGURE 5: CUSTOMER PARTICIPATION LADDER**

Give every single customer the opportunity to have a strong voice and engage with us, with at least 2m customers participating by 2025.



**Customers will become fans, giving up their own time to participate with us. They have an impact on what we do and see that this is the case.**

- Customer workshops and focus groups
- Community meetings
- Innovation Festival sprints
- We are family events #wearefamily

**Customers actively support our initiatives and choose to take part.**

- Water Rangers
- Community Champions
- Water efficiency audits and retrofit visits
- Customers solve other customers' problems

**Customers provide feedback, contribute to online forums and comment on social media.**

- Tracking surveys
- Rant & Rave feedback
- Have Your Say forum (posts)
- Feedback using real time apps

**Customers respect our network, maintain profiles, visit social networking sites and download and use apps.**

- Education campaigns
- School education campaigns
- Social media conversations
- App downloads

**Customers read other customers' reviews, online forums and blogs and watch videos.**

- Educational YouTube videos
- Flo reach
- Postal campaigns

## **3.1 Unrivalled customer experience** continued

### Outcome 2 continued

#### Living business plan

In 2017, we asked the Multidisciplinary Innovation (MDI) team at Northumbria University to talk to customers and other stakeholders about how best to present our customer-facing business plan.

During a week-long design sprint, they explored how we could bring the plan to life for our diverse customer base.

The MDI course attracts students from wide-ranging backgrounds including design and social sciences. The students generated several creative proposals for the plan and tested and co-created them further with customers.

The teaching cohort then further developed the students' work and their approach was:

- The plan is responsive, living information;
- The plan is customer-centred, curated content;
- Curation is through four actions: Impress me, Tell me, Prove it, Ask me; and
- The 'plan' content is situated next to business stories, voices and debates.

One outcome was the idea of a 'living' business plan, effectively providing a platform for customers to continuously engage with our current plan and to shape our future plans.

This initiative will take us away from the five-year cycle of business planning, allowing customers to participate in a meaningful way on an ongoing basis.

The result is [www.nwgourplan.co.uk](http://www.nwgourplan.co.uk).

#### Ofwat IAP test areas

-  Engaging customers
-  Delivering outcomes for customers
-  Targeted controls, markets and innovation



**Our Dwaine Pipe campaign will reach at least 1m more customers.**



**Every Drop Counts has saved on average 21.3 litres each per day for each customer.**

#### Extending our campaigns to involve, educate and inform customers

We currently have five flagship customer engagement schemes:

- Every Drop Counts brings a community approach to using water wisely. It has been pioneering a 'whole town approach' to water efficiency since 2015;
- Love your Drain, most recently winner of the national campaign of the year 2018 at the Chartered Institute of Marketing, was co-created with students at Northumbria University to educate customers about blockages and misuse of the sewer network;
- Rainwise, highlighted as best practice in a study led by UKWIR, allows us to work with communities at risk of flooding to manage surface water;
- Water Rangers engages customer volunteers to protect the water environment for the benefit of communities; and
- Water without the Worry supports our customers to seek additional help and support when they need it most.

Every Drop Counts is a great example of how co-creating behaviour change campaigns with our customers delivers positive experiences for our customers. It uses a combination of targeted advertising and community based marketing to maximise participation in the wide range of water efficiency projects to help our communities not only save water, but also energy and money too. To date – and since its initiation in 2015 – more than 18,200 households in eight towns have received one of our industry-leading free water efficiency retrofit visits each. As a result they have saved on average 21.3 litres each per day, relating to an annual saving of more than £20 on a customer's bill.

The whole town approach targets all of our water efficiency activity in one location. This gives as many residents as possible the chance to raise ideas, share opportunities and think of ways in which they could encourage further participation to reduce water use through their networks and communities.

We will continue to co-create our water management customer education campaigns. Our plans for 2020-25 include:

- Increasing investment in our Love your Drain campaign, so that we reach at least 1m more customers;
- Developing a tool that enables customers to trace waste from their property through to final treatment. This will operate alongside virtual reality materials that engage children and support the delivery of the school curriculum;
- Taking a more outward approach to informing customers about the role and whereabouts of our assets more widely. This will include offering more tours of our treatment sites where customers can see the processes we undertake first-hand;
- Employing a property-based approach to the delivery of existing education campaigns, which recognises the importance of the home. This will address all of the impacts that a customer has on our business in a coherent way, incorporating our customer education campaigns and information about the extra help and support we provide; and
- Producing and distributing a guide for new home owners, to prevent future harm to our assets on new development sites. We will do this through our developer services team, given their knowledge about new development sites that are being constructed and their existing contacts with our developer customers.



## 3.1 Unrivalled customer experience continued

### Outcome 2 continued

We know that the future of water efficiency is going to be about delivering behaviour change on a large scale. We are currently developing a digital engagement platform and app that will allow customers to view their own water consumption and to understand how this compares with previous periods and with their neighbours' consumption. Customers will also receive personalised water efficiency advice/ services through an online platform. The platform will tie in with our current databases and portals to offer customers the bespoke information they need.

In addition, we will build on our research into behavioural economics and water efficiency by developing an innovative incentive scheme. Customers will be rewarded with 'shares' in saving water and receive 'dividends' based on what the community achieves in terms of water savings.

And finally, a consistent theme at our co-creation sessions with customers has been the need to engage with 'Generation Alpha' (young people who are now at school). We will introduce a range of initiatives, including:

- Developing more educational resources to directly support the STEAM (Science, Technology, Engineering, Arts and Maths) curriculum;
- Co-creating projects and communications with young people using activities that are aligned to their interests such as film making, music production, blogging and design; and
- Creating a 'horizons board', a panel of young people who will meet on a quarterly basis and will provide insight, influence and ideas on how we run our business day-to-day and on the innovations we jointly plan for the future.

### Building an understanding of what we do

We work hard to communicate the message that we are much more than 'just a water company' and show customers the diversity of our responsibilities, the work we lead on, and the initiatives we are involved in. Our customers tell us that they want to know more about our added value activity in their communities as it helps them to feel confident about our business operations and to understand our values (Assurance Plan Research, 2018).

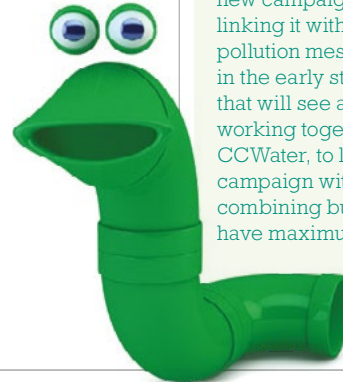
We will invest more in raising awareness of what we do across our regions so that customers develop a far greater understanding of the value of water and of our role.

#### Ofwat IAP test areas

- EC** Engaging customers
- OC** Delivering outcomes for customers
- CMI** Targeted controls, markets and innovation



**We are much more than 'just a water company'.**



### Working with customers to reduce blocked sewers

**Now in its sixth year, our Love Your Drain campaign continues to influence the behaviour of our younger customers and their parents, with our blockage mascot, Dwaine Pipe, communicating a serious message in a light-hearted way.**

To reduce blockages we have used a mixture of traditional marketing with more innovative methods such as virtual reality, curriculum-based teaching in schools and developing the Dwaine Dash game.

We are now developing our campaign further by creating a separate campaign aimed at adults rather than children. Persona workshops have helped us identify the kind of messages these customers will respond to and what will best influence a change in behaviour, as well as discovering where they shop and what forms of social media they use.

With wet wipes being the main cause of blockages we are concentrating the new campaign in this area and also linking it with environmental plastic pollution messages. Additionally, we are in the early stages of a national project that will see all wastewater companies working together, coordinated by CCWater, to look at a single, nationwide campaign with clear, targeted messages, combining budgets and resources to have maximum impact.

One of the ways in which we will do this is through our regional pride campaign. As a company we share an affection for, and are proud of, our regions. Our regional pride campaign will tell the story of high profile local brands and personalities, some of whom appear in case studies as part of the six key themes in our plan, and their unique connections to our water. The campaign will help enhance perceptions of our 'Living Water' brand as a trusted supplier of clean, clear, great tasting water.

We have our own targets in relation to awareness of our brands. Our targets are that by 2025:

- 80% of customers surveyed will demonstrate brand recognition and high-level awareness of the services we provide;
- 50% of customers surveyed will demonstrate an understanding of the value of water and wastewater services; and
- 75% of schools in the areas we serve will actively use our education resources.

We will measure these through our Brand Values and Domestic tracking research and will publish our performance against these targets annually.

## **3.1 Unrivalled customer experience** continued

### Outcome 3

# Our customers say we are a company they trust.

### Why this outcome is important

Trust is the foundation of effective relationships. Our ambition is to be the most trusted business our customers experience.

### How our customers' views have shaped the plan

When our customers describe what drives their trust they cite several factors (Defining the Conversation, 2016; Trust & Value, 2017; Outcomes Review, 2017):

- Transparent and honest communication;
- Taking a local focus through charitable work and corporate social responsibility;
- Providing reliable services; and
- Measuring and sharing our performance.

These factors have all shaped our plan to continue being a company that customers can trust.

Our customers tell us that being able to trust us is important to them and that they want to talk to us and to influence our plans around trust (Defining the Conversation, 2016).

The factors that contribute to their feelings of trust towards us include:

- Excellent customer service experiences;
- Reasonable, accurate and fair bills;
- Maintaining and caring for our infrastructure;
- Consideration of the environment; and
- Looking after customers who may need additional help and support.

Our ambitious plans in relation to these issues are detailed in the relevant sections of our plan.

ICS research reflects these themes, finding that customers expect higher standards of corporate social responsibility, ethics and environmental sustainability; and that traditional values, such as trust, will continue to grow in importance.

#### Ofwat IAP test areas

-  Engaging customers
-  Delivering outcomes for customers
-  Targeted controls, markets and innovation

### What our plan will deliver for customers

#### Transparent and honest communication

One of the ways we will continue to build trust with our customers is by helping them understand what we do. We will invite and encourage customers to shape our activities and the future direction of their water company. The previous section set out the steps we are taking to ensure that participation is an instinctive part of this approach.

The strength of trust our customers described was stronger for NW than for ESW. As a result we intend to focus brand perception campaigns in our ESW operating area. We will address this through our customer participation and engagement work, by raising awareness of our brand, and through the work that we do with our ESW communities.

# 71%

of our employees tell us they believe we live our values


**CCWater's Water Matters Annual Research has rated us first or second place since 2014.**

### Corporate social responsibility and our contribution

For us, being an ethical company is about doing the right thing. This encompasses many areas of our work and is the driver behind many of our ambitious goals. We are, and will continue to be, a values-driven business. Our values are embedded in our business and 71% of our employees tell us they believe we live and breathe them every day. These, together with our business standards and practices, will help us achieve our ambitious goal to be the most socially responsible water company.

We have long been recognised as leaders in the field of responsible business practice, as demonstrated, for example, by our inclusion from 2011-17 in Ethisphere's World's Most Ethical Companies list, being named Utility of the Year in 2017, being longlisted for Business in the Community's 'Responsible Business of the Year' award in 2018, achieving the British Quality Foundation UK Excellence Award in 2018, and being named Company of the Year at the Water Industry Achievement Awards in 2018. In 2018, we were also voted – for the fifth year in a row and by a clear margin – as the top company to work with in British Water's survey of company performance.



## 3.1 Unrivalled customer experience continued

### Outcome 3 continued

In CCWater's Water Matters survey, customers in our NW operating area scored us highly in a number of categories. The results showed NW as the most trusted water and wastewater company in England for the fifth year running, and being among the top rated in a number of other key areas including reliability and resilience, water quality, affordability, customer service satisfaction and sewerage services. The results showed that:

- 88% of our customers surveyed have confidence in our long-term supply of water (this is the highest in the country);
- 81% of our customers thought the charges they pay for their water and sewerage were affordable (putting us joint first in the country); and
- 92% expressed overall satisfaction with sewerage services (this is the best in the country).

Our customers also rated us highly when it comes to our NPS, positioning us as leading the industry, which supports our ambition of delivering world class service.

As a business we represent the wider water sector, a responsibility we take very seriously.

#### Ofwat IAP test areas

-  Engaging customers
-  Delivering outcomes for customers
-  Targeted controls, markets and innovation

Our CEO, Heidi Mottram, was named as one of the top global water leaders, and one of the most influential people in the water industry by Water and Wastewater International, as part of its Top 25 Global Water Leaders initiative. Heidi joined NWL in 2010 and has driven the business to lead the way in customer service, environmental practice, innovation and corporate social responsibility. Heidi was the first female CEO in the water industry and has championed diversity in the industry. She was named in the Top 50 Women in Engineering in 2016, and was awarded a CBE in June 2018 for services to the water industry.

Visible leadership and independent recognition, such as that demonstrated by Heidi and our other senior leaders, builds trust and credibility with all of our customers and stakeholders.

We are ever-present in our regions, and have been for nearly 200 years in one form or another. We do not think of ourselves as owners of water – but as the current custodians of water; an honour we intend to pass onto future generations. We recognise that our contribution is much wider than providing water and wastewater services or our financial returns. For example, our engagement campaigns bring communities together, and our activities can create a lasting impact within our communities.

Finally, we have started the journey to understand, measure and enhance our contribution by reporting each year on our financial, social, natural, manufactured and human and intellectual capitals.

 See Section 2.3

#### Providing reliable services

Trust takes time to build, yet can be broken in an instant. Our customers have told us that service failures can cause them to lose trust, but that if we respond promptly, are honest and transparent, and keep them informed, then the potential loss of trust can be mitigated (Trust and Value, 2017).

As outlined in Outcome 1, we plan to improve our already good response times alongside providing regular and proactive updates when things do go wrong.

#### Measuring and sharing our performance

Our customers value transparency and want us to be accountable for our performance. They want us to report publicly, using 'hard facts, figures and documentation as evidence' as this supports our credibility and in turn builds trust (Trust & Value, 2017). Trust is informed by the accuracy of the information we provide, and the open way in which we report performance (including on how our performance compares with that of other companies).

We are strongly committed to reporting our operating performance in an open way and support the use of comparative information to drive improvements. We have made significant efforts in this regard, for example by publishing comparative information on our own 'Discover Water' web pages. We were the first company to do this. To build trust further from 2019 onwards customer metrics, such as satisfaction scores, average wait times, and water quality figures, will be reported monthly on [www.welivewater.co.uk](http://www.welivewater.co.uk).

## 3.1 Unrivalled customer experience continued

### Outcome 3 continued

A further layer of transparency is provided by the Water Forums. Through their independent scrutiny role and expert challenge they provide assurance to us, to Ofwat and most importantly to customers.

We are conscious that key stakeholders, such as the media, MPs, local councillors and charities can also influence the level of trust that our customers have in our business and, depending on their experience of our business, can be advocates or detractors. We therefore closely monitor our levels of stakeholder trust so that we can make sure that the people and organisations who our customers trust are properly informed and supportive of our activities.

We are currently working with Stephen M R Covey to develop a trust framework that will help to measure trust in our people managers, our leaders, our suppliers, key stakeholders and our customers in a clear and consistent way. This will help us to better understand the drivers of trust within our business and the perception of trust by those outside of our business, so that we can make sure that our actions are consistent with our values.

#### Ofwat IAP test areas

- EC** Engaging customers
- OC** Delivering outcomes for customers
- CMI** Targeted controls, markets and innovation

### Our performance commitments

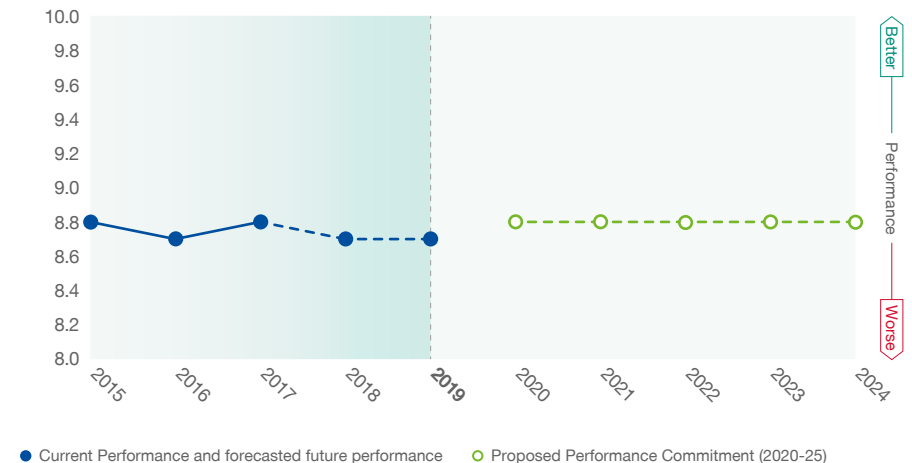
We want to focus on making sure that we continue to build on and strengthen our customers' trust in us. As a result we have introduced a new, bespoke measure – our customer trust score.

This measure is based on a telephone survey, part of which asks customers how much they would agree that we are a company they can trust. Customers score their satisfaction with our performance between 1 and 10 (the higher the score, the greater the level of satisfaction). We survey 2,000 customers throughout the year to provide an annual score.

We know trust is a highly emotive measure and our performance since 2014 has fluctuated between 8.6 and 8.8. Achieving this good standard of performance in an environment where: the performance of water companies is under close public scrutiny; expectations of service providers are ever increasing; and trust is not easily gained or retained is seen as a significant achievement.

Our PC is to stabilise our customer trust score at 8.8 out of 10 by 2025, our best ever performance, increasing to 9 out of 10 in 2030 and maintaining this thereafter.

**CUSTOMERS' PERCEPTION OF TRUST**  
Mean score out of 10



## **3.1 Unrivalled customer experience** continued

### Outcome 4

Our finances are sound, stable and achieve a fair balance between customers and investors.

#### Why this outcome is important

Ensuring fairness and demonstrating sound, stable finances both contribute towards our customers having trust and confidence in us, thereby helping to maintain our legitimacy as a sector.

Customers expect us to operate our business sustainably in the long term. This enables us to make sure that customers do not experience sharp changes in their bills, or disruptions and deteriorations in service. Being a secure long-term business also helps to protect the livelihoods of our employees.

Having sound and stable finances is important so that we can continue to attract capital to finance the investment necessary to maintain and enhance our assets.

Here we outline how we meet our customers' expectations in relation to this outcome. Section 8 sets out the financial aspects of the plan in more detail.

#### How our customers' views have shaped the plan

During 'Defining the Conversation' engagement (2016), customers expressed an interest in understanding more about our finances. Customers were more interested in this than in learning more about the detail of where our spending is directed, such as for sewage collection or water resources.

In response we co-created with customers the financial information we now provide. 'Our Finances Explained' ( [A](#) See Appendix 1.2) is a section on our customer-facing websites which explains how much of our customers' bills, in pounds and pence, goes towards different types of expenditure (such as staff, materials, interest, profit and energy) each day.

#### Ofwat IAP test areas

- EC Engaging customers
- OC Delivering outcomes for customers
- CMI Targeted controls, markets and innovation

#### Our finances explained

Our customers told us they were interested in understanding more about our finances during our 'Defining the Conversation' work.

We set up a participatory session attended by our Finance Director and Financial Controller to talk about issues such as profits and tax.

The discussions provided valuable insights into what customers knew and what they were interested in. We discovered customers did not at first understand why we should need to borrow money even though we are making a profit, or that we are required to pay tax.

Customers told us that they liked our simple presentation of how much of their bill, in pounds and pence, goes towards different types of expenditure (such as staff, materials, interest, profit and energy) each day. They were much less interested in where the spending is directed, such as for sewage collection and water resources.

The discussions helped us improve the bill breakdown infographic that we provide with bills, and enabled us to be really transparent for customers by creating a specific 'Our Finances Explained' section on our websites.

"It gave me a positive perception because it [the infographic] explained it all and exactly where all the money is going" (C2DE, 65+).

#### What our plan will deliver for customers

##### We are financially resilient

The Board places a strong focus on maintaining long-term financial resilience. This is aided by having a simple capital structure and is underpinned by our Board's commitment to maintaining a robust investment grade credit rating (assessed by independent credit rating agencies Moody's and Standard & Poor's), and through the Board's oversight of our comprehensive risk-management process.

We make sure that the dividends we pay to our shareholders are set at a level that is consistent with retaining our strong investment grade credit rating and delivering our required capital investment programmes. Our robust ratings and strong capital structure enable us to raise debt finance efficiently. We monitor our financial obligations over the long term and also maintain a detailed five-year plan that is updated and reviewed annually by the Board.



## 3.1 Unrivalled customer experience

continued

### Outcome 4 continued

#### We raise debt finance efficiently

We invest around £1m every business day in new assets and equipment. Given the size of this expenditure we need to supplement the money we raise each year from our customers through their bills by borrowing additional money from banks and debt markets. In 2017/18, this amounted to c.£117m net of repaying maturing debt.

We borrow in a controlled and sustainable fashion to ensure that we can deliver substantial investment in our asset base without this leading to a significant increase in customer bills. We spread the financing cost of our investment and manage the borrowings over long periods of time. This means that both current and future customers help to pay for the investment. As a result, bills are more stable and sustainable for customers, with a fair balance of contributions between generations.

#### Ofwat IAP test areas



Engaging customers



Delivering outcomes for customers



Targeted controls, markets and innovation

We periodically issue bonds to the debt markets. We finance our activities and investments by short-term bank loans (less than five years) until we build up enough new debt to allow us to convert this into a longer term bond issue. Our bonds are typically publicly listed on the UK Stock Exchange and are sold directly to pension funds and other large institutional investors which then receive interest from us each year. The bonds benefit from our strong investment grade credit ratings which helps reduce the rate of interest we pay, ensuring that our financing costs remain as efficient as possible.

Our credit ratings are assigned by Moody's and Standard & Poor's, specifically of Baa1/BBB+ as at the time this report was issued. These strong credit ratings enable us to obtain financing at competitive and attractive interest rates, and the benefits of low funding costs flow into customer bills.

By maintaining a well-balanced debt portfolio we are able to better manage risks of adverse movements in inflation and interest rates and minimise volatility on customer bills. Our total borrowings at 31 March 2018 amounted to £2.87bn.

#### We share any efficiencies we make with our customers

We operate and finance our business as efficiently as we can on behalf of our customers. Striving to be at the frontier of cost efficiency benefits all water and sewerage customers in England because it drives the efficiency frontier – against which all companies are benchmarked – to new levels.

Through the price review process customers benefit from sharing the cost efficiencies we have made to date as well as those we anticipate making over the 2020-25 period. Any outperformance of the totex regulatory allowance for 2015-20 is shared with customers, resulting in lower bills over the period 2020-25. Forecast savings for 2020-25 also reduce bills in this period.

As well as sharing cost outperformance customers also benefit from efficiencies in financing costs. We will have efficiently raised more than £750m of debt over 2015-20; this has enabled us to reduce our overall cost of debt substantially, and this benefit will be passed on to our customers. The regulatory methodology tracks the costs of raising new debt, so customers do not pay any more than is necessary to cover the cost of borrowing.

#### We pay our taxes

Another significant cost to the business is taxes. For example, in 2017/18 we made total tax payments of approximately £102m. This mainly covered business rates, PAYE, National Insurance and corporation tax.

We are fully transparent about our tax arrangements and publish our Tax Strategy on our website.

**A** See Appendix 1.2

Our business plan includes an allowance for the corporation tax we expect to pay, just like any other operating cost. The plan contains our estimate of tax payments that reflect the benefit of tax reliefs that are available to us and known future rates of tax. This helps us to keep the cost of customers' bills down.

We pay corporation tax on our profits after taking into account reliefs that are available to all companies under the UK tax system. The calculation of our taxable profits includes deductions for interest on our borrowings, capital allowances on money we invest in improving our infrastructure networks, and tax losses made available to us by other group companies. Tax is paid in four instalments based on the current tax charge in our financial statements.

## **3.1 Unrivalled customer experience** continued

### Outcome 4 continued

The capital investment we make brings benefits to the regions in which we operate. Our investment has been running at more than £200m a year over the last five years. This is likely to increase over the coming five-year period 2020-25 and is a significant factor in determining how much tax we pay now and in the future. The capital allowances system results in an acceleration of tax relief and, while it helps save the company tax in the present, it will result in tax being paid in the future because the benefit of the investment is realised over time.

The availability of capital allowances in 2017/18 resulted in customer bills, on average, being lowered by approximately £8 for customers of ESW and £15 for customers of NW.

#### Ofwat IAP test areas

- **EC** Engaging customers
- **OC** Delivering outcomes for customers
- **CMI** Targeted controls, markets and innovation



Our Procurement strategy includes ensuring that human and labour rights are protected, embedding anti-corruption practices, increasing social value and promoting environmental issues.

### We plan our finances for the long term

We believe that we are well placed to manage our business risks now and over the long term. As such, the business will be able to continue to operate effectively and to meet its financial obligations during 2020-25, and in the years thereafter. To inform this view we have taken into account:

- Our licence, which is in place on a rolling 25-year basis;
- Our financial strength at the balance sheet date;
- The key financial ratios and strong investment grade credit ratings;
- Our flexible dividend policy; and
- The main risks and uncertainties that we face, and the mitigating controls that are in place.

### We have a financially stable business plan

The plan has been stress tested under a number of extreme but plausible adverse scenarios. To the extent that any of the scenarios tested, in isolation or combination, would place at risk our ability to retain our credit ratings, we are confident that this could be mitigated by delivering exceptional levels of service and performance for customers, at an efficient level of cost, and by applying our flexible dividend policy. We have carried out separate third party assurance on our calculations and on the stress testing of the plan.

### We procure responsibly

We understand that responsible procurement is the basis of effective markets and resilient supply chains. As part of this we seek suppliers that share our social, economic and environmental standards.

Our Responsible Procurement Strategy ensures that we meet our needs for goods, works and services in ways that achieve value for money on a whole-life-cost basis, and which also generate benefits for society and the economy.

A See Appendix 1.2

Our strategy is based on best practice from a number of sources including the Chartered Institute of Procurement and Supply, the Ethical Trading Initiative and the UN Global Compact. It follows the Sustainable Procurement TaskForce's Flexible Framework model.

Our strategy includes ensuring that human and labour rights are protected, embedding anti-corruption practices, increasing social value, and promoting environmental issues.

We run a programme that instils responsible procurement in everything we do, helping us to address the impacts associated with our own procurement, and giving our supply chain the knowledge and tools they need in relation to their own activities. Our Responsible Procurement Supplier Charter sets out the principles we expect all of our supply chain to comply with when doing business with us.

We take account of social value in our supplier assessment and contract management by focusing on skills, job creation and support for initiatives such as work placements, apprenticeships and promoting science, technology, engineering and mathematics (STEM) within schools. Our Run2 Academy, developed with our delivery partners within the supply chain, has a programme of activities to promote social value.

We continue to improve our performance in this area and in 2020-25 will measure our performance by setting clear targets using the Flexible Framework approach. We will report annually on performance, invite independent scrutiny of our progress and share good practice.



# Affordable and inclusive services

“ In the ‘Conversations with Vulnerable Customers’ research done in 2016, customers fed back that the term ‘vulnerable’ can bring a stigma to them. We are pleased that the company acted on this feedback, so that what started as a Vulnerability Strategy evolved into an Inclusivity Strategy.

Several of our members have expertise in this field, and we were given the opportunity to give input to and challenge the Inclusivity Strategy during its development. We very much support the direction it has taken and the multi-faceted approach. ”

**The Water Forums**




## A caring service everyone can afford

“ I look forward to water poverty being a thing of the past. It’s good to know affordability is at the top of the agenda. ”

Paying a bill or choosing to eat. This isn’t a decision anyone should have to make but Jo Nicholl from the charity HOPE in Newcastle knows it’s a reality facing some of our customers. She works with people living in very difficult financial situations, helping them to find light at the end of the tunnel.

We are working hard to eradicate water poverty and charities like HOPE provide a vital link to customers who we can support with flexible, affordable and inclusive services.

 [Click here to view Jo’s story, or scan the page in your Zappar app.](#)



# 3.2

## Affordable and inclusive services



Our affordable and inclusive services theme has one outcome:

- Our customers say our services are good value for money and we work hard to keep water and wastewater services affordable for all.

Our ambitious goal for affordable and inclusive services is to:

- Eradicate water poverty in our operating areas by 2030.

### Ofwat IAP test areas

- EC** Engaging customers
- AV** Addressing affordability and vulnerability
- OC** Delivering outcomes for customers
- CMI** Targeted controls, markets and innovation

## 14%

Reduction in water bills by 2024/25

## 17%

Reduction in wastewater bills by 2024/25

## Theme overview

**Water and sewerage services should be affordable for all of our customers – whatever their circumstances – and they should all have equal access to an unrivalled customer experience.**

In our operating areas, 18% of our households (around 370,000 households) spend more than 3% of their disposable income on their water and sewerage services. By taking a longer term view and an innovative approach to address affordability, we have been able to stretch our ambitions and will lead the sector in addressing water poverty.

Our customers who need extra help, whether financial or otherwise, tell us they would like to enjoy the same services as everyone else – rather than being singled out, or labelled as ‘vulnerable’, they want to feel included. That is why we talk about ‘inclusivity’, meaning everyone can benefit from the same level of unrivalled customer experience.

The innovations in this area that will deliver the difference for our customers are:

- Lower bills for customers, with a reduction of 14% for our water customers and 17% for our wastewater customers by 2024/25.
- Our Inclusivity Strategy, which was created with our customers and partners so that our services are truly inclusive and deliver Water without the Worry for all customer groups;
- The UK’s first and only Water Poverty Unit, established through our strategic partnerships with StepChange and NEA; and
- ‘Pay your own way’, an app-based tariff that allows customers to change when and how much they pay, putting them in control of their bills.

## 3.2 Affordable and inclusive services continued

### Outcome 5

Our customers say our services are good value for money and we work hard to keep water and wastewater services affordable for all.

#### Why this outcome is important

Making sure bills are affordable for all of our customers is our industry leading aspiration. Our ambitious aim to eradicate water poverty by 2030 is a powerful example of this.

We understand that a household's finances can go up and down and that some of our customers will face difficulties according to their personal circumstances and at different stages of their lives.

More than one in ten customers struggle to pay their water bills (Defra, 2016); and since 2010 the number of customers contacting National Debtline with worries about water bill arrears has increased by 10% (Ofwat, 2015).

In our own regions, across the North East and South East of England, a number of our customers experience some of the highest levels of deprivation, unemployment and welfare benefits receipt in the country. Against this backdrop, many of our customers in the cities, towns and rural communities that we serve are struggling to make ends meet.

Our plan will increase the disposable incomes of our customers who need it the most, when they need it the most. This will reduce the worries these customers face when it comes to paying essential household bills and putting food on the table for their families. We are confident we can do this and we know that this is the right aspiration to have.

#### Ofwat IAP test areas

-  Engaging customers
-  Addressing affordability and vulnerability
-  Delivering outcomes for customers
-  Targeted controls, markets and innovation

 **Our aim is to eradicate water poverty by 2030.**

#### How our customers' views have shaped the plan

Our customers have told us that affordability and value for money are amongst the topics that they are most interested in engaging with us about (Defining the Conversation, 2016).

There is strong evidence that a stable and affordable bill is highly important to customers (Resilience, Asset Health and Long-term Affordability, 2017).

We have specifically engaged with our customers to shape our plans around tariffs and measured and unmeasured methods of charging. Our customers have co-created a range of innovative tariffs with us, designed to increase affordability and improve the environment.

Our customers support:

- Contributing an average of £2.85 per year towards a social tariff to increase the affordability of water and wastewater bills to customers who need it most (Social Tariffs, 2019);
- Rewarding customers for positive environmental and water efficiency behaviours; and
- Supporting customers to earn money back on their bills (Tariff Structures, 2018, Innovative Tariffs, 2018 and Behaviour Change and Funds, 2017).

We know that our customers' awareness of the financial support we offer remains low (CCWater Water Matters, 2016). Our customers tell us they want to be better informed about our priority services register and financial support, and our plan addresses this.

In relation to measured and unmeasured charges our customers told us:

- Fixed charges – particularly high ones – are unreasonable (Tariff Structures, 2018);
- Metering is the fairest way to charge, but that choice over reverting back to an unmeasured bill is important (Metering, Supply and Demand, 2017, and Tariff Structures, 2018);
- Metered customers would like more opportunities to save money by saving water (Metering, Supply and Demand, 2017 and Behavioural Change and Funds, 2017). This is partly because the fixed charge element of our metered charges is one of the highest, limiting the amount of money customers are able to save when taking steps to be more water efficient; and
- Awareness about the benefits of water meters, that they are fitted for free and that customers can revert to unmeasured charges, could be improved (Water Matters, 2018).



## **3.2 Affordable and inclusive services** continued

### Outcome 5 continued

#### **What our plan will deliver for customers** **Inclusivity Strategy**

We launched our Inclusivity Strategy to bring Water without the Worry in May 2018.

**A** See Appendix 1.2

The strategy includes our ambition to eradicate water poverty across our regions by 2030. The strategy was co-created with our customers. It also benefited from the challenge and scrutiny of members of the Water Forums who come from a range of community and charitable organisations and were able to provide expert advice and guidance. The strategy reflects what is most important to our customers when it comes to the services we provide and the extra help we offer. In particular, customers wanted us to deliver Water without the Worry.

Importantly, and at our customers' request, our strategy focuses on being inclusive and using language that embraces diversity, rather than labels, such as 'vulnerable' which can push people away.

As we have developed our plan, we have made sure that around a quarter of the customers who have been involved have been those who may benefit from extra support.

#### Ofwat IAP test areas

- EC** Engaging customers
- AV** Addressing affordability and vulnerability
- OC** Delivering outcomes for customers
- CMI** Targeted controls, markets and innovation

We asked our customers what unrivalled service means to them and they told us:

- To make sure our services are inclusive and affordable for all;
- To listen, and think beyond the obvious, taking ownership of customers' problems and proactively offering extra support when it is needed;
- To design policies with sensitivity to the needs of customers who may benefit from extra help and support; and
- To work with experts and promote the support we can offer by spreading the word about what we do with trusted local and national organisations and charities.

#### How we will know our Inclusivity Strategy is delivering Water without the Worry

We are confident we can deliver our plans and give a commitment to doing so. We will monitor our progress closely, and report back regularly to our customers, Water Forums, partners and other stakeholders. Our aspirations are for the long term and focus over many years will be required to achieve them.

These are the ways in which we will monitor progress:

#### Every year

- At least 25% of all of the customers who get involved in shaping our services and plans for the future will be those who need extra help.

#### By 2022/23 we will:

- Achieve at least equal levels of satisfaction between customers who need extra help and those who do not; and
- Increase awareness of our Priority Services from 44% to 65% and sustain awareness at this level as a minimum; and
- Achieve BSI accreditation for inclusive service provision.

#### By 2025 we will:

- Reduce complaints about our SupportPlus and Priority Services to zero; and
- Reduce the number of households living in water poverty across our regions by approximately 66%.

#### By 2030 we will:

- Eradicate water poverty across our regions.

#### Eradicate water poverty by 2030

This commitment is central to our Inclusivity Strategy. As part of this commitment our plan delivers a substantial reduction in bills for all of our customers (bills will reduce by 14% for our water customers and

by 17% for our wastewater customers by 2024/25).

We have considered our approach to eradicating water poverty very carefully, so that we can make this pledge with confidence. Our ambition requires innovation, and a change in mind set about how to go about helping our customers. There is no single solution; indeed a focus on social tariffs alone can only go so far. A far wider view of the challenge is needed.

Eradicating water poverty starts with defining exactly what this means so we can understand the scale of the problem. We have used a definition similar to those previously outlined by both CCWater (Living with Water Poverty, 2014) and Ofwat (Debt and Affordability, 2015).

To define the scale of the water poverty challenge in our regions, we looked at the findings in a range of existing research reports and available statistics, as well as commissioning our own analysis. We engaged data and analytical experts, Call Credit, to match our customers' bill information at an individual level against credit reference agency household income data.

## **3.2 Affordable and inclusive services** continued

### Outcome 5 continued

As we only provide water services in our ESW operating area, customers in that area receive sewerage services from either Anglian Water or Thames Water. We therefore made sure that our analysis took into account the level of the sewerage bill (and therefore the overall bill levels) for these customers.

Our research and analysis confirmed that around 370,000 households across our regions would currently fall into the water poverty classification; just over 18% of our customer base.

We mapped out a range of initiatives, including those involving the participation of our customers, which will support households in water poverty to spend wisely and save money. These initiatives include changes to existing tariffs and the introduction of new social tariffs, alongside a focus on targeted metering and water efficiency campaigns, strategic partnerships, employee volunteering and customer signposting. This list is far from exhaustive and we fully anticipate that new ideas and initiatives will emerge.

We have worked closely to align our financial support with the support that is offered by Anglian Water and Thames Water to make sure that where a customer benefits from one financial support scheme they would also qualify for help for the second service. Our aim is that customers should not have to contact both water and sewerage providers separately where a need is identified by one company and that this is managed directly between the two companies offering the support.

By 2025, we expect to have moved 241,000 households out of water poverty. We recognise that this is a dynamic ambition; we know that many factors can influence disposable income levels and as we help some customers out of water poverty others may move into it. However, we are committed to this ambition and will proactively share our plans with colleagues across the sector to encourage a step change in our industry's ambition.

### Using data to identify customers who need extra help

We are working with data experts like Experian and more recently Call Credit to overlay the data we have about our customers and their household circumstances, with financial and income data.

This allows us to identify the number of customers living in water poverty at any point in time.

We can then use information from other sources such as Office for National Statistics and the Multiple Indices of Deprivation alongside other published research to build up a picture of where to focus our efforts in targeting those households where we can make the biggest difference.

Our partnerships with other organisations and charities will provide intelligence too. For example, working with NEA, we can understand more about customers living in fuel poverty and target them to increase levels of financial support and advice.

#### Ofwat IAP test areas

- EC** Engaging customers
- AV** Addressing affordability and vulnerability
- OC** Delivering outcomes for customers
- CMI** Targeted controls, markets and innovation

### Social tariffs

Our social tariffs will clearly play an important role in our affordability ambitions. In 2014, we introduced SupportPlus, our collective name for two social tariffs, funded by the business, to provide financial assistance and discounts to customers in arrears. To date these tariffs have helped many thousands of households.

In April 2018, we introduced a new, customer cross-subsidised social tariff into our SupportPlus umbrella, focusing on disposable income levels as a gateway for support. This social tariff was developed following agreement with CCWater that acceptability research demonstrated support from our customers, for the first time, of a cross subsidy.

To qualify for the new tariff, a customer's water bill must be more than 3% of their disposable household income, less housing costs. The support is capped at a household income of £16,105 (in line with the child tax credit cap), preventing high income/high bill households benefiting where they simply choose to use more water. We will also introduce a new qualifying group in April 2019 for pensioner households in receipt of pension credit. To maximise the number of households receiving support, and moving out of water poverty, discounts are applied in bandings of 10%, from 10% to 50%.

# 241k

by 2025 we expect to have moved 241,000 households out of water poverty

## **3.2 Affordable and inclusive services** continued

### Outcome 5 continued

The scheme was promoted in various ways, including on our Crystal Mark Plain English bills. Since the launch in 2018 we have supported more than 3,000 customers.

We are also working with service providers in the South East to create a cross-regional network of organisations supporting customers facing financial and non-financial difficulties. Our first area of focus is the alignment of our social tariffs and a single sign-up model which will remove the need to contact more than one service provider.

Looking ahead, our customers have indicated that they are supportive of social tariffs that support low income pensioners (Social Tariffs, 2016). Our analysis and research also suggests that lone parent and single person households can often struggle financially (Ofwat's 2016 Vulnerability Focus Report; Financial Conduct Authority's 2017 Understanding the Financial Lives of UK Adults report). We will improve the way we identify those who are most in need of support through increased use of external data sources such as credit reference data, Department for Work and Pensions data and initiatives to share data with energy companies.

#### Ofwat IAP test areas

- EC Engaging customers
- AV Addressing affordability and vulnerability
- OC Delivering outcomes for customers
- CMI Targeted controls, markets and innovation

3,000

since the launch of SupportPlus in 2018 we have supported more than 3,000 customers

14%

reduction in water bills by 2024/25

17%

reduction in wastewater bills by 2024/25

### Co-creating our new look bills

**Following detailed analysis of unwanted contact and complaints it became evident that our customers were finding our bills and associated billing literature difficult to understand.**

Direct feedback from our customers stated that they found the bills 'too busy' and technical while the accompanying literature, which detailed the make-up of charges and various initiatives to support customers, was very rarely read, and more often than not went straight into the bin.

Working with McCann and Co (a company that specialises in bill improvement) and Explain (a research partner) we co-created a new suite of bills.

Initial telephone research and four co-creation groups enabled us to review our current bills, taking time to really understand what our customers found difficult to understand and what they considered to be important. We also reviewed bills from the wider customer service industry and explored what attributes of future bill designs would be of interest.

A workshop with our employees and CCWater sought their expert views and explored what they saw as the issues of the current literature, taking care to make sure bills could be presented in paper and digital formats.

In June 2016, we shared various options and styles of potential new billing literature with customer focus groups. We received great feedback from our customers who welcomed the new bills, and found them easy to understand and act upon.

Introducing new bills is something that needs to be carefully planned and communicated to our customers. The bills are more personalised to customers and we now only provide information to customers that is relevant. Following extensive communication campaigns and development the new bills were launched in May 2017.

The new bill is typically four pages long, providing all of the necessary information in an easy to read and compact format replacing a two page bill that was typically accompanied with a 12 page leaflet. We were delighted to receive the crystal mark standard for plain English for the new bills and following the launch we saw unwanted contact relating to bills drop by up to 40%.

We anticipate that our clearer bills will mean our customers find it easier to understand what and when they should pay, meaning increased revenue collection.

### Bill reductions and tariff changes

We strive to keep bills as low as possible for our customers. For this reason we are passing on the benefits of efficiency gains and lower returns for customers through our bill proposals. As a result bills will reduce by 14% for our water customers and by 17% for our wastewater customers by 2024/25.

Our customers told us they would like us to address the balance between fixed and variable measured charges.

Between now and 2025 we will take steps year on year to reduce the fixed charge element of the metered charge and to increase the usage element. This will start with our 2019/20 bills, and we will use the price reductions we expect from 2020 to make real inroads in this area. This will give customers far greater motivation to save water and in doing so reduce their bills, making them even more affordable, and taking some customers out of water poverty altogether.

## **3.2 Affordable and inclusive services** continued

### Outcome 5 continued

#### Tariff innovation in response to customer demand

More innovative tariffs such as those that are offered in competitive retail environments are now expected by our customers. Customer participation has helped us to consider new and innovative tariff ideas. We will explore the options below in more detail with customers and plan to implement them from 2020 at the latest. This is all on a par with the best service provided by telecommunications companies.

- A ‘pay your own way’ app-based tariff that offers a flexible payment plan option, allowing customers to:
  - Adjust the frequency of their payments;
  - Increase the amount they want to pay; or
  - Arrange a payment holiday.

Customers increasingly demand this level of control. The benefits include that customers are not surprised by unexpectedly high bills as their service usage varies through the year, and they are able to smooth seasonal debt. This level of flexibility allows customers to tailor how they pay to suit their own individual circumstances, making life easier for them and improving their customer experience.

#### Ofwat IAP test areas

- EC Engaging customers
- AV Addressing affordability and vulnerability
- OC Delivering outcomes for customers
- CMI Targeted controls, markets and innovation



**A ‘pay your own way’ app-based tariff will offer flexible payment plan options.**

- A fixed tariff for metered customers so they have peace of mind knowing that they will never pay more than their fixed bill, as long as they stay within agreed usage bands. Customers on this tariff will be able to measure and control their consumption, and we will support them with appropriate digital alerts;
- An interactive digital tariff that will provide customers with fast, simple, proactive and timely communication, an example being high or increased usage alerts. Payments and identity verification will be integrated with social media accounts, resulting in quicker processing times for our customers. Usage information within this tariff will be available in real time so that customers can monitor and control their own service use. Customers will also be able to switch payment plans with ease. Features will include access via wearable technology and apps, a virtual suggestion box, augmented reality and voice messaging;
- A new home package, including holistic home audits, to support customers who are moving home, particularly first time buyers and bill payers. We are also looking at opportunities to offer bundled services such as billing for gas, electricity and broadband; and

- Waterwise, a special rate for households using less than 100 litres per person, per day. Customers will be required to take their own meter readings, and receive digital bills only. There will also be incentives around surface water, for example installing soft areas for absorption of run-off.

We will also look to introduce schemes to reward customers for positive environmental and water use behaviours, with the aim of achieving a shift in attitudes and sustainable behaviour change. Such initiatives will be very much in line with the customer participation FACE framework (Tapped In, Ofwat, 2017).

#### Metering and water efficiency campaigns

Research shows that many of our customers who are currently living in water poverty receive an unmetered water bill. A significant proportion of these customers could save money by switching to a meter. In other cases we have customers who feel ‘stuck’ on a meter, and low-income families in these circumstances can see their bill as being unaffordable. As the meters that we currently offer to customers are analogue, our customers cannot easily track their water usage, which limits their ability to reduce their bills by using less water.

Over the past two years we have comprehensively reviewed our approach to metering, involving our key internal business experts, external experts, and, most importantly, more than 1,200 customers. We have recognised that our primary purpose in metering is to serve customers and our strategy for 2020-25 and beyond has been built on that principle.

Meters offer a number of benefits to customers – all of which will be significantly enhanced through implementing more advanced meter technology or ‘smart’ meters.

Our customers want choice about how they pay for water and wastewater services. They have told us we need to do more to generate awareness of the option to have a meter and of fact that there is currently an option of a two-year trial period during which customers can revert back to unmeasured charges at any time. We know that many customers do not opt for a meter because they do not know about the trial period and are potentially missing out on savings. We will work to raise awareness of the trial period and will focus on specific customers where we identify that they could benefit from having a meter.

## £ 3.2 Affordable and inclusive services continued

### Outcome 5 continued

We are committed to improving awareness through targeted metering campaigns, alongside water efficiency work, in areas of water poverty. Our Every Drop Counts campaign is an innovative, inclusive and effective way of reaching customers who need additional support, by engaging with them on their doorsteps.

The range of new tariffs we plan to introduce will enhance choice and the tariffs will be fundamentally enabled by data from smart meters. We will continue to work on the choice of tariffs we offer so that customers who feel 'stuck' on a meter can benefit from tariffs that make their water bills affordable for them in their changing circumstances. By developing these ideas further we will offer true tariff innovation.

Going above and beyond our core services, we will give recommendations for water and energy-saving goods, and will lobby manufacturers to encourage clear labelling and advice to deliver this.

Our customers want insight as to how they use water so they can reduce their usage and what they pay. During 2020-25, we will start our journey to deliver real-time insight to customers through a digital service as described in Section 3.1. This will be enabled by data from smart metering.

Metering allows us to resolve customer issues much more quickly. This applies more to smart meters than to analogue meters. There are many examples of this, including: being able to identify a leak on a customer's private pipework; resolving disputes about bills; and enabling a better experience for customers when they move house (as we will be able to take an accurate meter reading on a specific date).

In 2020-25, we will install over 473,000 water meters with smart technology as part of our customer metering programme.

**A** See Appendix 3.2

This £15m enhanced investment in smart metering technology will enable us to start on our journey towards achieving a full transition to smart metering by 2035.

#### Innovative hot water monitors

Joining forces with Isle Utilities and several UK and international water companies, we are using innovative hot water monitors to help customers understand their water and energy use. These simple, value for money devices can be fitted easily to a customer's pipework to give them control over their hot water use and energy costs. For a household, simply replacing one bath a week with a five minute shower can save on average £22 a year on water and energy bills.

#### Ofwat IAP test areas

- EC** Engaging customers
- AV** Addressing affordability and vulnerability
- OC** Delivering outcomes for customers
- CMI** Targeted controls, markets and innovation

**“ Innovative hot water monitors will help customers understand their water and energy use. ”**

**£15m** investment in smart metering technology leading to full transition to smart metering by 2035

### One-stop shop for water and energy saving visits



**Our innovative work with Southend-on-Sea Borough Council's Local Energy Advice Programme refers customers to AgilityEco for comprehensive advice on saving energy, water and money, in one joint visit.**

Each visit now includes the retrofitting of a range of water saving devices such as efficient shower heads and tap inserts. We spent time with the installers adding water efficiency knowledge to their wealth of energy efficiency experience.

Effective customer engagement is also vital so we make sure we provide customers with the information and advice they need to make simple behavioural changes to the way they use water and energy.

Linking in affordability and Priority Services advice around water, this is a great example of providing one-stop visits to our customers through collaboration with trusted third parties – and is one we will extend in 2020-25.

This enduring focus on encouraging water saving habits aligns with our ambitious goal to achieve a PCC in our operating areas of 118 litres per person per day by 2040.

**92** For more information see Section 3.3

#### Strategic partnerships

Our customers told us, most recently during the creation of our Inclusivity Strategy, that the way to build relationships with them is often through trusted third parties, and we know from experience how powerful this can be. Our partnerships are formed on a basis of mutual trust, respect, benefits and meaningful relationships.

The ground breaking work we do with StepChange, the debt advice charity, is a fantastic example of our partnership work. Since 2013, we have worked closely with StepChange to support customers in financial difficulty. Our employees receive specialist training from the charity to support customer interactions. We refer customers to StepChange for free confidential debt advice and solutions, and allow time for customers to develop a debt action plan. We also run joint campaigns to raise awareness of the help we provide to those in need.

## **3.2 Affordable and inclusive services** continued

### Outcome 5 continued

We continue to be the largest referrer to StepChange across the UK water industry and since January 2015 we have helped nearly 11,000 customers get their finances into a better place following our direct referral. Our customers go to StepChange with an average water debt of £736.26 and for water debt alone our referrals have helped our customers to resolve water debt of over £3m. As more than 35% of these customers have housing arrears our impact is much wider than providing water debt solutions.

StepChange confirms that we have the most active relationship with them (we hold monthly review meetings together) and are the only water company receiving individual client feedback. This allows us to provide targeted support for customers to access lower bills and arrears write-offs.

As the trusted voice across the water sector, we were selected to represent the industry on the Creditor User Group for StepChange's Transformation programme, helping re-design the service that is provided to reach more clients.

“ I have been the lead relationship manager with NWL since 2014. Over this period NWL has taken the lead for the water industry, being the first to refer customers formally to the charity and develop customer strategies to maximise engagement. They have supported various pilot activity over the years and remain the only water company to receive feedback on customer referrals. This has been important to the charity as it has allowed us to pilot a new process which we are looking to expand to other partners in time.

Our regular engagement has allowed us to understand the objectives of both organisations and develop a partnership which is mutually beneficial. This can be seen in the continued growth of referrals which has helped expand the charity's reach and help more clients than we could on our own. NWL has referred more customers to us than any other water company which is testament to the quality of the partnership and the trust built between the two of us. ”

**Mark McElvanney**  
 Senior Relationship Manager  
 StepChange Debt Charity

#### Ofwat IAP test areas

- EC Engaging customers
- AV Addressing affordability and vulnerability
- OC Delivering outcomes for customers
- CMI Targeted controls, markets and innovation

“  
**With NEA we will establish the UK's first and only water poverty unit.**

“ This is a tremendously exciting project. We are delighted to use our 35 years' experience tackling fuel poverty to help better understand and tackle water poverty. People who struggle to afford a warm and dry home will struggle to afford other essential services, such as water. Understanding what works and how it can be applied in energy and water should bring benefits to both sectors and we look forward to working with NWL, and other water stakeholders, to help make it happen. ”

**Adam Scorer**  
 Chief Executive, NEA

Our latest partnership with NEA, which we launched in May of this year, is another first for the water sector. NEA is widely known for its charitable work to eradicate fuel poverty and provide warm homes for thousands of households living in fuel poverty. It made great sense for us to combine our efforts in the knowledge that each organisation is trying to support the same households across our regions.

This exciting new partnership includes the establishment of the UK's first and only Water Poverty Unit. The unit is an innovative way to further scope and understand the links between water and fuel poverty, establishing how action on the essential utilities of gas, electricity and water can bring affordable water and affordable warmth to those who need most support. The unit will:

- Apply any learning and good practice from the water sector to people in fuel poverty and vice versa;
- Explore local, regional and nationwide partnerships between utility firms serving the same communities and households; and
- Develop a multi-partnership campaign to engage with those households living in water and fuel poverty to encourage take-up of direct and indirect financial support, and behavioural change such as water and energy efficiency.

## 3.2 Affordable and inclusive services continued

### Outcome 5 continued

Our strategic partnerships with StepChange and NEA will support our ambitious goal to eradicate water poverty within our operating areas. We also share details from our Priority Services register with other utilities under a project called 'Infrastructure North'. This offers packages of support for water and power services to customers who need temporary or permanent help to read their bills, or during a water interruption event or power cut.

#### Volunteering and training

Our volunteering efforts are already award winning, with more than half of our 3,200 employees spending company time supporting charities and good causes every year.

To support our plans to eradicate water poverty, we will target our volunteering work towards activities that help customers living in water poverty to spend wisely and save money. This includes education and advice campaigns alongside financial inclusion training.

#### Ofwat IAP test areas

-  Engaging customers
-  Addressing affordability and vulnerability
-  Delivering outcomes for customers
-  Targeted controls, markets and innovation



**Financial support to customers will extend beyond saving money on water bills.**

An example of the impact we have already had is our work with Know your Money. This is a lottery funded organisation that offers a range of services including money advice, training and employment support to 16 to 24-year-olds in Middlesbrough, one of the most deprived towns in England.

As part of our 'liveability' programme, our employees provide education around responsibilities specific to water, from registering an account to how to reduce water usage. The thinking behind this initiative is that if we can educate customers from the outset, we can prevent these customers becoming future debtors. We also spent time training Know your Money advisors so they could signpost young people to our support.

#### Customer signposting

Signposting is a very simple way to offer financial support to customers that extends beyond saving money on water bills. By linking in with organisations such as Turn2Us and Income Max, we can help even more customers save money and increase their disposable income.

We do not take our monopoly status for granted and we will offer the complimentary retail services customers now expect from utility providers such as the energy market. Our signposting is taking a more innovative direction to work with money saving and price comparison website companies to help our customers save through switching to better value for money services across energy, broadband, mobile phone and insurance.

#### Customer ambassadors

Our innovative approach to tackling water poverty is reaching out to customers in other ways too. We are currently piloting an initiative with digital business Limitless, recruiting customers as company ambassadors to share advice on water saving tips, leak detection and pipe protection. In return for every piece of advice ambassadors give, we will pay them a fee which they can offset against their bill or take as a payment – either way increasing their disposable income.

Our ideas and innovations to deliver Water without the Worry will continue to develop and we expect to implement more ways of working between now and 2030 as part of our ambitious goal to eradicate water poverty within our operating areas.

#### Focusing on voids and gap sites

Keeping property voids and gap sites to an economical minimum level supports our aim to keep bills as low as possible and affordable for all of our customers.

The new water retail market has seen significant changes to the management of occupancy status for non-household customers (business properties).

**A** Our fuller views and approach are detailed in Appendix 3.3

#### Household voids

A void property could either be empty, or occupied but unbilled. We describe an empty property as a 'true' void property.

Our NW operating area has a much higher 'true' void property level than many other parts of the country. This is largely driven by a less active housing market, with property demand much lower than in other parts of the country.

Government statistics and our own observation between our ESW and NW operating areas show that our ESW operating area should have a lower level of 'true' void properties than our NW operating area. For example, the London Borough of Barking and Dagenham reports a void rate of 1.02% compared with Durham, Hartlepool and Middlesbrough local authorities – all reporting more than 4%.

## **3.2 Affordable and inclusive services** continued

### Outcome 5 continued

Our current number of void properties does not reflect this observation. We therefore feel that there is scope to reduce our number of void properties in our ESW operating area in particular.

We currently have a dedicated team that actively monitors and manages the occupancy status of household properties. We plan to increase our activities in this area, with more focused field teams and better use of credit data files to bring customers into charge as early as possible, therefore helping to keep all our customers' bills affordable.

#### Non-household

We have historically controlled non-household gap sites by managing and aligning our property database to that of the Valuation Office Agency (VOA). We will continue to do this and have set ourselves a stretching PC of matching 95% of our database by 2025. This coupled with our intention to sample check our database against other relevant external databases will ensure that we maintain a leading level of performance in relation to the detection and avoidance of gap sites.

Since the opening of the non-household retail water market, the primary responsibility for maintaining non-household occupancy status lies with retailers.

As a wholesaler, we have a significant interest in the accuracy of the occupancy status. We are currently assessing the impact market opening has had in this area. We will assess the accuracy and integrity of occupancy data for non-household properties and make sure that control mechanisms are put in place to do this effectively. These control mechanisms will involve validation by staff and require reference to external third party databases and associated data services. As the new market is still relatively immature, we envisage that our approach may change as the new operating environment stabilises. This could potentially include incentive schemes, vacant premise charging mechanisms and support for centrally funded schemes as appropriate.

#### Ofwat IAP test areas

- EC Engaging customers
- AV Addressing affordability and vulnerability
- OC Delivering outcomes for customers
- CMI Targeted controls, markets and innovation

#### Focus on bad debt

For a number of years now we have focused on a data driven approach to debt collection. Our approach combines externally purchased data such as credit defaults with data collected during conversations with customers (including employment status and home ownership) along with payment behavioural data. We use this information to make a series of automated collections decisions so that we can take the most effective and efficient action to collect the balance owed.

Following the introduction of our new CC&B system and implementation of our customer experience platform we have significantly improved our capability for making these data based decisions. We intend to continue to develop our credit scoring approach by introducing new datasets. We expect to be live with the first of these during 2018 as we move from default credit sharing to full profile credit sharing. We are also in a strong position to make use of any data sharing that arises from the digital economy bill.

The new systems mean that we can now offer additional payment flexibility such as everyday Direct Debit and new weekly and fortnightly direct debit plans.

This evolution of our collections approach will sit alongside the additional support that we provide customers such as our SupportPlus schemes, priority services and financial education initiatives. These would be directly targeted at those customers we identify as potentially needing additional financial help, all of which will ultimately help to reduce bad debt.



## £ 3.2 Affordable and inclusive services continued

### Outcome 5 continued

#### Our performance commitments

##### Percentage of customers in water poverty

Our ambition is to eradicate water poverty by 2030. We estimate that in our operating areas around 370,000 households will benefit from this.

The definition of water poverty is 'households spending more than 3% of their disposable income on their water charges, after housing costs'.

To identify those in water poverty we will use Call Credit to validate our database against income values they hold.

The percentage of households in water poverty measure allows us to demonstrate where we will be on this journey by 2025. We recognise that this is a significant aspiration, and that there are many areas out of our direct control that will influence progress.

Our stretching PC is to reduce water poverty from current levels of 18.4% of our customers to 6.3% by 2025.

#### Ofwat IAP test areas

- EC** Engaging customers
- AV** Addressing affordability and vulnerability
- OC** Delivering outcomes for customers
- CMI** Targeted controls, markets and innovation

# 65%

we will increase awareness levels of the financial support we offer to 65% by 2025, increasing to 85% by 2035

#### Awareness of additional support

A key component of delivering Water without the Worry, this measure assesses customer awareness of the additional support the company offers (financial and non-financial).

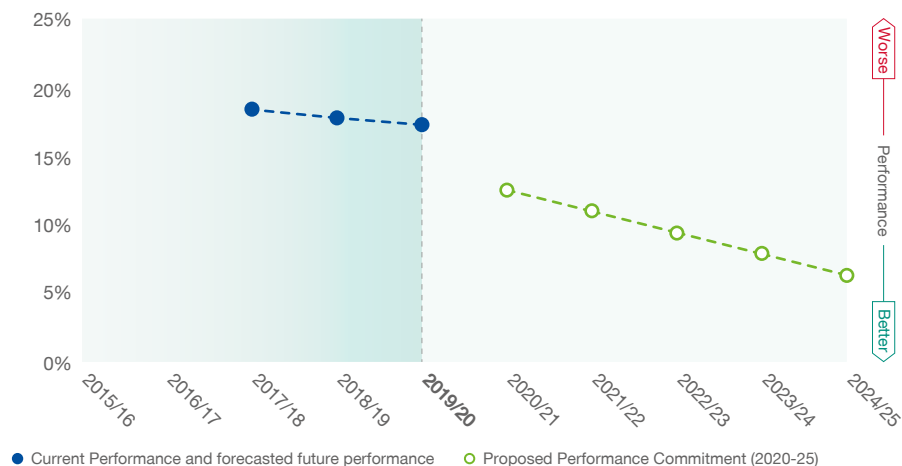
Customers tell us they want to be better informed about our priority services register and customers who have accessed SupportPlus have rated it very highly.

To make sure that customers are receiving the right services and charges it is important that they are aware of the additional support services available to them.

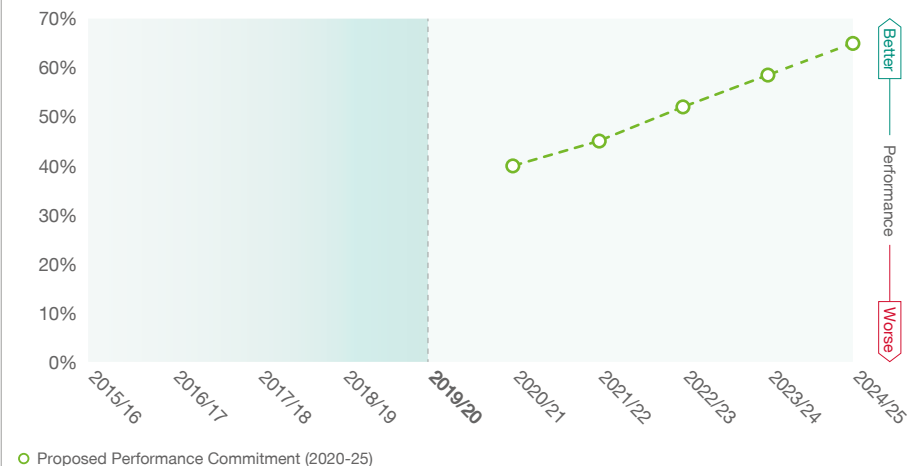
This measure will be based on the results of our independent domestic tracking customer survey which as of March 2018 incorporates a question on awareness of the additional support we offer. The research consists of 500 completed interviews carried out quarterly (2,000 annually) in line with the Market Research Society code of conduct (internationally recognised as best practice). Customers score their awareness with a yes/no answer and this will be presented as a percentage.

Our first quarter results show current awareness levels are at 39%.

**PERCENTAGE OF HOUSEHOLDS IN WATER POVERTY**  
Percentage of households spending more than 3% of their disposable income on their water and sewerage charges



**AWARENESS OF ADDITIONAL FINANCIAL SUPPORT**  
Percentage of household customers who have awareness of our additional support services



## 3.2 Affordable and inclusive services continued

### Outcome 5 continued

We propose two PC's to increase awareness levels of the additional support services we offer. The first is to increase awareness of the financial support we offer to 65% by 2025, increasing to 85% by 2035. The second PC is to increase awareness of our non-financial support from 44% to 65% by 2022 which aligns with our inclusivity strategy commitment.

This level compares favourably with CCWater's Water Matters 2017 results. For 'awareness of additional non-financial support' we scored 42% for NW and 48% for ESW, compared with an industry average of 43%.

The leading level was 52%. We have chosen this PC to exceed the current leading level.

### Satisfaction of customers who receive additional support

This measure assesses the customer satisfaction of those customers who receive additional financial or non-financial support.

This will be measured through a telephone survey where customers who are on our Priority Services Register and/or signed up to our SupportPlus tariff or for Watersure are asked to rate their overall satisfaction with the service we provide. Customers score

#### Ofwat IAP test areas

- EC** Engaging customers
- AV** Addressing affordability and vulnerability
- OC** Delivering outcomes for customers
- CMI** Targeted controls, markets and innovation

their satisfaction with our performance between 1 and 10 (and the higher the score, the higher the level of satisfaction). During the year 1,000 customers are surveyed, to provide an annual mean score/result.

Our aim is to achieve equal levels of customer satisfaction between customers who need help and those who do not, as a minimum. The best score we have achieved in the last six years for general overall satisfaction of service is 8.7 in 2017 (the two years before that had remained stable at 8.5).

As this is a new measure we only have one sample result to provide a baseline in performance and we anticipate

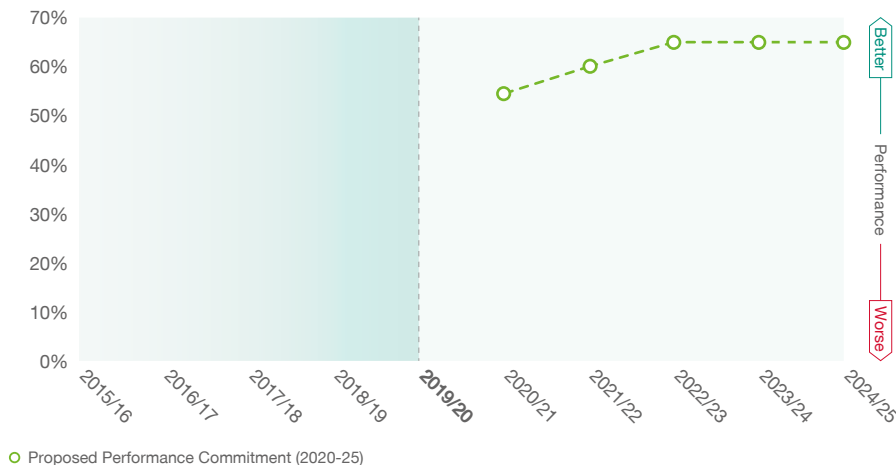
(based on internal Rant and Rave comparisons on customer satisfaction) that this will drop slightly as we receive more results. We are proposing to have a PC to achieve a score of 8.8 out of 10 for overall satisfaction levels of customers who need extra help by 2023/24 and to maintain this level for the years beyond. We will report this PC separately for customers receiving financial and non-financial support with the commitment to achieve 8.8 out of 10 for both groups.

### Voids

A void property is a property that we are aware of but which is not currently being billed.

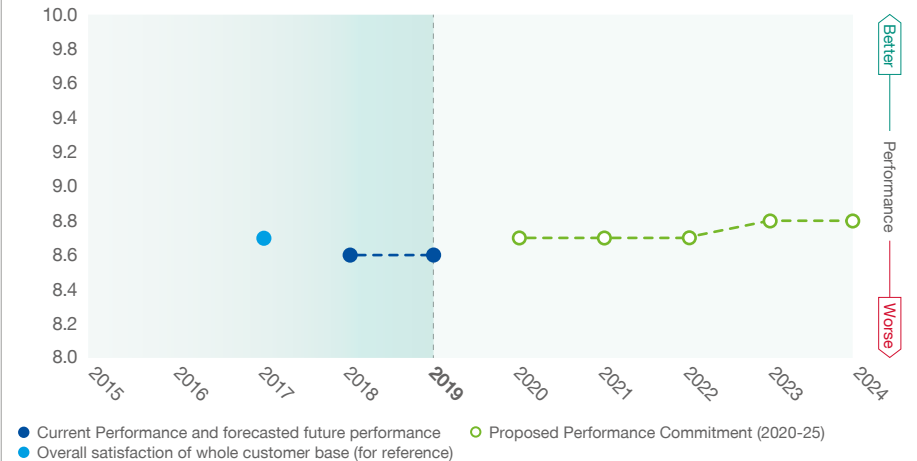
### AWARENESS OF ADDITIONAL NON-FINANCIAL SUPPORT

Percentage of household customers who have awareness of our additional support services



### SATISFACTION OF CUSTOMERS WHO RECEIVE ADDITIONAL SUPPORT

(both financial and non-financial)  
Mean score out of 10



## £ 3.2 Affordable and inclusive services continued

### Outcome 5 continued

There is an underlying level of ‘true’ empty properties in our area, which based on local authority statistics is estimated to be 2.69% of properties. Our current void numbers are 4.85%. This includes genuinely empty properties but also a number that we predict are occupied but unbilled.

With this type of measure there is an economic balance to be achieved in investing the right level of resource into reducing voids. The closer we get to the true level of voids, the more expensive identifying the new occupied property becomes.

We have compared our numbers to the industry and government numbers. We have set a target that brings us in line with the industry average, after adjusting for the underlying numbers of empty properties in our operating areas.

Our proposed PC is to reduce our level of void properties by just over 7,000 properties, which is as close as economically possible to the true underlying level. We are proposing to set our PC at 4.21% by 2025, reducing this further to 4% in 2030 and maintaining this level thereafter.

#### Ofwat IAP test areas

- EC** Engaging customers
- AV** Addressing affordability and vulnerability
- OC** Delivering outcomes for customers
- CMI** Targeted controls, markets and innovation

### Gap sites

A gap site is a property that is connected to our services but is not recorded on our systems (in other words, we are not aware of it). By definition the number of gap sites is an unknown and unmeasurable number. Our proposed measure is hence an indirect one which seeks to decrease the risk of gap sites existing.

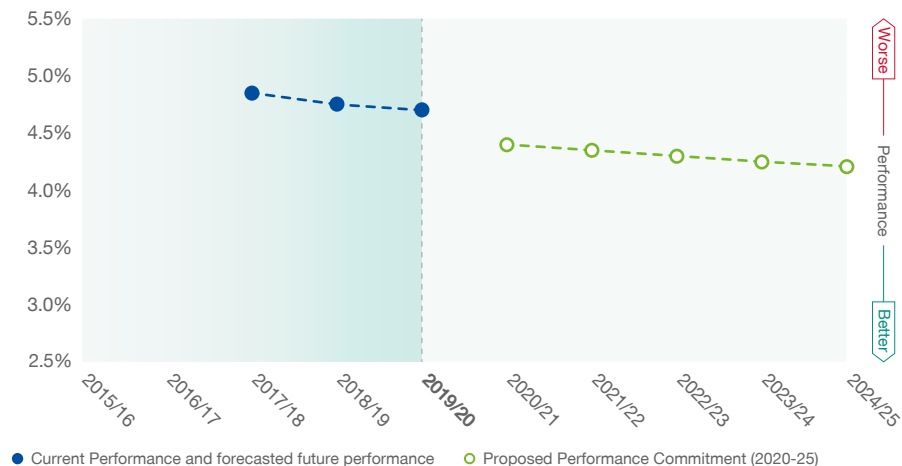
For gap sites we have chosen to focus initially on non-household properties. We will measure the extent to which we have matched our property database with that of the VOA (which sets rateable values in order to set business rates).

There will always be a number of properties that are recorded on our database such as churches and farms that are not on the VOA list. Similarly, there will be some on the VOA list that all relate to one water service connection but are separately rated (such as, for example, some holiday lets).

Around 76.5% of our properties are currently matched to the VOA list; 95% is a reasonable proportion that will be fully matchable. We therefore propose to set our PC at 84.4% in 2020/21, tightening to 95% in 2024/25 and maintaining this in the years beyond.

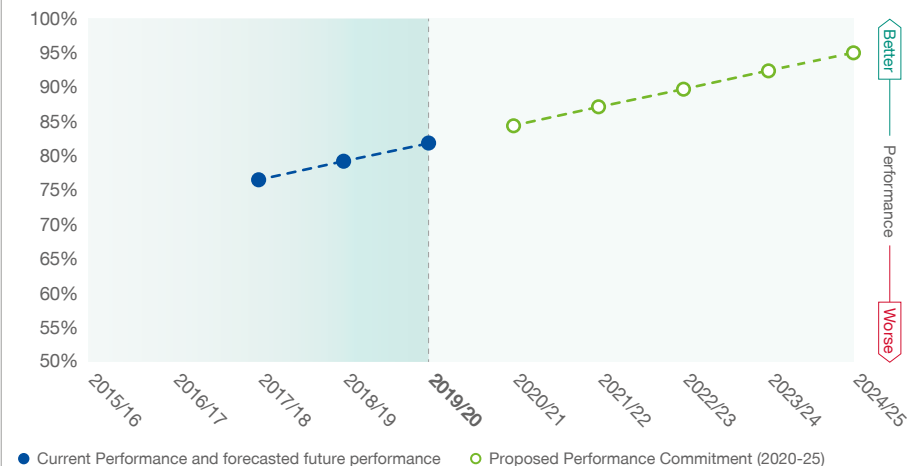
### PERCENTAGE OF VOID HOUSEHOLD PROPERTIES

Percentage of void household properties ie those not currently billed for water and/or sewerage services



### NON-HOUSEHOLD GAP SITE MATCHING

Percentage of properties on the VOA Rating list which have been matched to our corporate database of connected non-household properties





# Reliable and resilient services

“ We like NWL’s resilience framework as a way of demonstrating how the different aspects of its business and future plans combine to deliver resilience in the round. We note that it was also favourably received by Ofwat when presented to them. ”

The Water Forums



Supporting our life savers like Sarah

“ Reliable is one of the best words to describe the fire service and a dependable source of water is vital to our service. ”

As a firefighter, Sarah Nattrass knows better than most of us the importance of a reliable source of water. When an emergency call comes in from one of the 620,000 people she helps to protect she depends on a constant supply of water at the scene.

Just as the 999 caller trusts fire crews will turn up when they’re alerted, Sarah has complete confidence water will always be there when she needs it.

 [Click here to view Sarah’s story, or scan the page in your Zappara app.](#)



# 3.3

## Reliable and resilient services



Our reliable and resilient services theme has four outcomes:

- We are resilient and provide clean drinking water and effective sewerage services, now and for future generations;
- We always provide a reliable supply of water;
- Our drinking water is clean, clear and tastes good; and
- Our sewerage service deals with sewage and heavy rainfall effectively.

Our ambitious goals for reliable and resilient services are to:

- Have the lowest levels of leakage in the country in our water-stressed ESW operating area;
- Have a PCC for water use of 118 litres per person per day by 2040;
- Promote confidence in our drinking water so that nine out of ten of our customers choose tap water over bottled water; and
- Eradicate sewer flooding in the home as a result of our assets and operations.

### Ofwat IAP test areas

- EC** Engaging customers
- OC** Delivering outcomes for customers
- LR** Securing long-term resilience
- CMI** Targeted controls, markets and innovation



**We have a strong track record as a resilient company.**

## Theme overview

**We will continue to deliver reliable and resilient services by anticipating change, planning ahead, and by making the right long-term decisions about how to run our business.**

We have a strong track record as a resilient company. Our water resources are very secure and we have a security of supply index of 100% in all of our water resource zones (WRZs) across the full 40-year planning period to 2060. Our performance on interruptions to water supply has seen us perform as the top water and sewerage company from 2011/12 to date. Our sewer flooding performance for both internal flooding and repeat flooding incidents demonstrates a magnitude of improvement since 2015.

We understand that the uncertainties that exist in today's world will continue to challenge our business into the future. To build our resilience in the face of these pressures, we have created a Resilience Framework. This considers the entire business, encompassing corporate, financial and operational resilience, so that we can address resilience in the round.

The innovations in this area that will deliver the difference for our customers are:

- A new Chief Resilience and Sustainability Officer to manage resilience in the round through our Resilience Framework and provide regional resilience leadership;
- Using big data to develop a 'heat map' approach to tackling leakage, saving 4.75bn litres of water a year;
- Expanding our whole town approach to offer every household a water and energy saving visit, using smart meters and digital platforms to personalise advice;
- Expanding the Refill campaign and our Powered by Water sporting partnerships to change perceptions of drinking tap water and the importance of staying hydrated on the move;
- Deploying the game-changing sensor technology developed by nuron in our live sewerage system to predict flooding incidents before they occur;
- Creating a new Security Operation Centre to identify threats, provide early warnings and increase our response capability;
- Working with global experts to deliver our Workforce 2025 strategy to create skilled, diverse, innovative and resilient people, with the emotional intelligence to respond to our customers' individual needs; and
- Enhanced resilience investment of £216.74m, supported by our customers to further cyber security, build water and wastewater resilience, and implement smart water metering.

## 3.3 Reliable and resilient services continued

### Outcome 6

We are resilient and provide clean drinking water and effective sewerage services; now, and for future generations.

#### Why this outcome is important

Our customers told us that resilience means a strong, reliable and affordable service that will stand the test of time, cope with change and bounce back from difficult situations (Resilience, 2016).

Today's world is one of constant change, opportunity and threat. Global threats such as climate change, economic uncertainties and terrorism now touch us all as we go about our daily lives, and risks are becoming increasingly unpredictable and unknown.

We manage a large and complex asset base where a failure could have significant impacts on our customers and the environment. We need to be confident that our business has the resilience to cope in this context.

#### How our customers' views have shaped the plan

Our customers are increasingly interested in the reliability and resilience of their water and wastewater services, and they want to talk to us directly about these. Our customers understand that we cannot remove all risks (Resilience, Asset Health and Long-term Affordability, 2018). However, they do expect us to plan for the future by updating and modernising our infrastructure and systems, to learn from past events, and to put in place the right strategies to prepare for similar events in the future (Resilience, 2016).

#### Ofwat IAP test areas

-  Engaging customers
-  Delivering outcomes for customers
-  Securing long-term resilience
-  Targeted controls, markets and innovation



**Our Resilience Framework takes an integrated and systematic approach to understanding risk and resilience challenges across all our business areas.**

We carried out four specific phases of customer research on resilience between July 2016 and May 2018, through which our customers indicated that they were willing to pay for a more resilient service.

Our customers support us investing in resilient networks and planning ahead for impacts, such as from climate change, regional population growth and major incidents impacting the operation of our sites and networks. They expect our systems to have connectivity and back-up. They also expect us to understand what is happening in our wastewater system given the availability of smart devices, and to use this information to prevent issues from occurring.

#### What our plan will deliver for customers

Our objective is to continue to strengthen our overall business capabilities, in order to mitigate and avoid issues impacting on our ability to deliver our services. Our activities will also ensure that we comply with our resilience duty as introduced by the Water Act 2014. This means making sure that robust governance and processes are in place to allow us to deal effectively with short-term shocks to our systems and operations, as well as planning for the long term.

To demonstrate that we are moving to a position of strength in the future we have developed our own Resilience Framework, an effective way to show the interdependency and complexity of our business systems across corporate, financial and operational aspects. By working together across these systems we can continue to provide clean drinking water and effective sewerage services; now and for future generations.

#### Our Resilience Framework

Our Resilience Framework (see Figure 6) provides a structure for us to achieve resilience in the round by taking an integrated and systematic approach to understanding risk and resilience challenges across all of our business areas. It is aligned to our customer outcomes and with Ofwat's resilience planning Principle 1 (which is 'Considering resilience in the round for the long term'). It encompasses corporate, financial, and operational resilience.

## 3.3 Reliable and resilient services continued

### Outcome 6 continued

The concentric circles in the framework illustrate lines of defence between external threats and the challenges to resilience, and our ability to maintain delivery of our services. The outer ring represents our approach to corporate resilience through managing corporate risk. We view this as the first line of defence, and as being essential to good operational and financial resilience. The inner rings show our approach to managing operational and financial risks both now and into the future. To be resilient in the round, each of the areas in our Resilience Framework must contribute to resilience.

To assess resilience within our business, our Risk & Compliance Committee regularly review current and emerging risks and challenges to our business systems, critical assets and operational processes. We record these risks in our Corporate Risk Register and publish the principal risks as part of our Annual Performance Report (APR) and Financial Statements. This ensures that we are open and transparent with customers regarding the risks we face and manage each day.

#### Ofwat IAP test areas

-  Engaging customers
-  Delivering outcomes for customers
-  Securing long-term resilience
-  Targeted controls, markets and innovation

Activities to build resilience in each business area address one or more of the four key strategic components of resilience as set out by the Cabinet Office – redundancy, reliability, resistance, and response and recovery. As we deliver increased system and service resilience across each business area, we expect to see a corresponding reduction in our ‘managed risk’ score. This approach provides assurance to customers, regulators and our shareholders that we understand our risks and are developing appropriate resilience strategies to continue to manage these effectively.

In 2015, we carried out a benchmarking assessment of our operational resilience in relation to the UK energy and utility industry (PricewaterhouseCoopers LLP, 2015). This assessment showed that we were generally operating ‘above best practice level’, although a number of areas of improvement were recommended.

In line with the PR19 methodology, companies must now look at resilience in the round to include the risks to operational, financial and corporate resilience. In July 2018, PwC carried out an independent assessment of our Resilience Framework.

 See Appendix 3.4

This reviewed our resilience with respect to best practice, Ofwat’s methodology and progress since the last resilience assessment in 2015. It found that we are adhering to the relevant sections of Ofwat’s guidance and that considerable progress has been made in improving resilience in the last three years. This has included making a range of improvements in relation to a number of risk areas such as people, cyber and business continuity arrangements.

PwC identified a few areas where there is scope for further improvement to ensure that our approach to resilience in the round continues to evolve and remain leading. We accept the direction of travel proposed and will work to further integrate our approach to corporate risk management and resilience planning. We will translate this into specific action plans and will regularly review our approach to take into account emerging best practice.

PwC’s report also highlights that we need to be aware that the subject of resilience and what good resilience looks like is likely to evolve in the next few years. We will address this with our plan to appoint a Chief Resilience and Sustainability Officer. This means that we can be focused and responsive as our understanding of resilience develops in the future.

Resilience in the round as a concept is difficult to measure and report on as a single entity, as many different aspects influence it. We understand too that building resilience goes beyond just managing risks. To develop our understanding and make progress in this area, we are funding a STREAM PhD with the University of Exeter to support the development of resilience strategies and metrics, based on the university’s Safe & SuRe decision framework and benchmarks (an approach that looks at the relationship between threats and their consequences and helps identify opportunities for intervention).

 We are pleased to be supporting NWL on this particular piece of research and helping them to better understand and embed resilience across their organisation. Measuring all aspects of an organisation’s resilience – ‘resilience in the round’ – is a challenge and we see this collaborative research supporting them in achieving this goal. 

**Prof. David Butler, FREng**  
University of Exeter

The findings of the project, expected in 2021, will help us develop a strategy to enhance and report on resilience that could be applied across the industry.

# 3.3 Reliable and resilient services continued

## Outcome 6 continued

**FIGURE 6: OUR RESILIENCE FRAMEWORK**

**WE ARE RESILIENT AND PROVIDE CLEAN DRINKING WATER AND EFFECTIVE SEWERAGE SERVICES; NOW AND FOR FUTURE GENERATIONS**

- 1 Resilient wastewater services
- 2 Resilient water services
- 3 Understanding customer priorities
- 4 Business continuity and recovery
- 5 Planning for resilient services in the long-term

**WE TAKE CARE TO PROTECT AND IMPROVE THE ENVIRONMENT IN EVERYTHING WE DO, LEADING BY EXAMPLE**

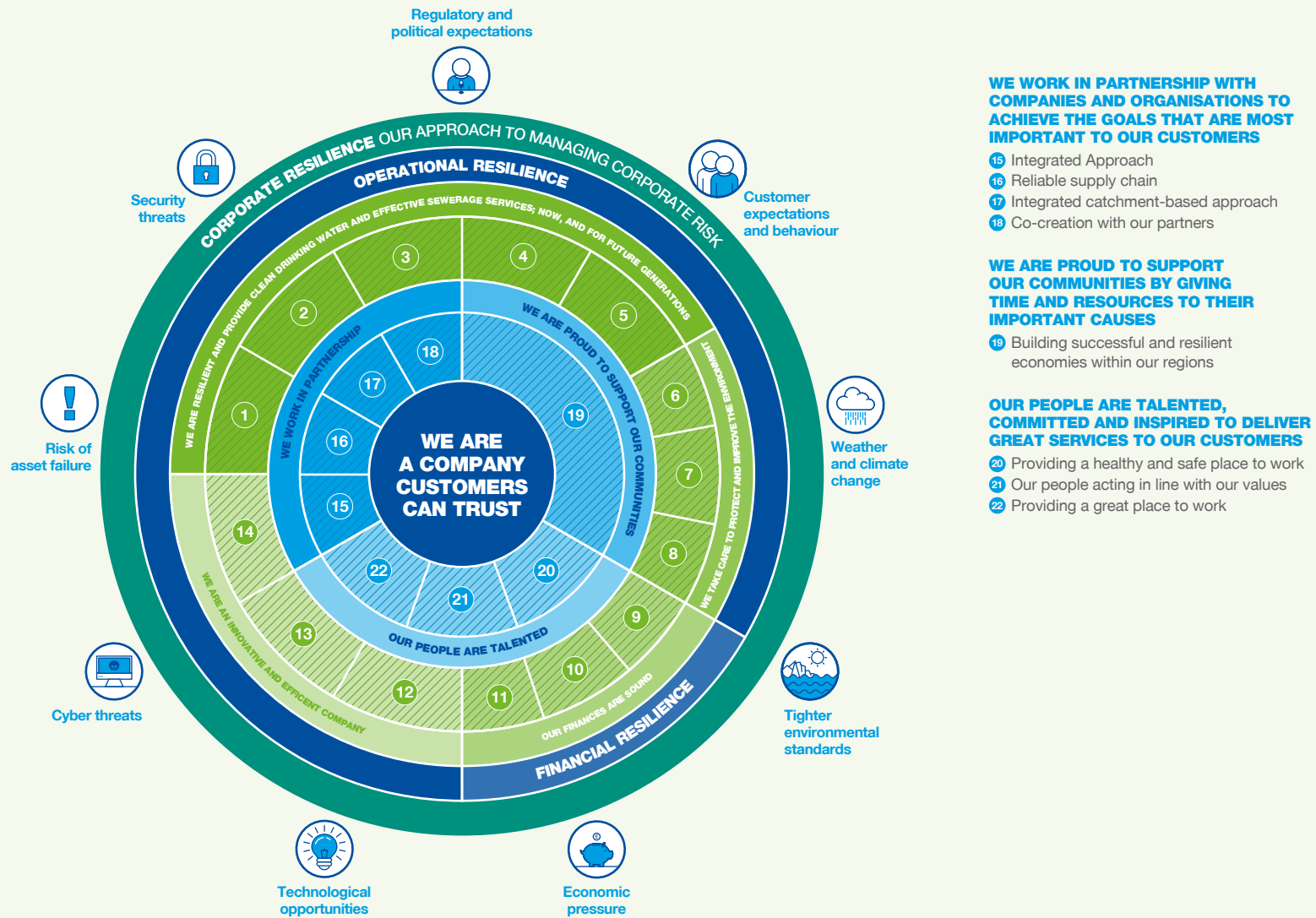
- 6 Resilient water environment and ecosystems
- 7 Sustainable and efficient use of energy
- 8 Sustainable management of our wastes

**OUR FINANCES ARE SOUND, STABLE AND ACHIEVE A FAIR BALANCE BETWEEN CUSTOMERS AND INVESTORS**

- 9 Affordable services for customers
- 10 Long-term financial planning
- 11 Financial monitoring and reporting

**WE ARE AN INNOVATIVE AND EFFICIENT COMPANY**

- 12 Intelligent asset management
- 13 Innovation and new technology
- 14 Enhanced cyber security and data protection



**WE WORK IN PARTNERSHIP WITH COMPANIES AND ORGANISATIONS TO ACHIEVE THE GOALS THAT ARE MOST IMPORTANT TO OUR CUSTOMERS**

- 15 Integrated Approach
- 16 Reliable supply chain
- 17 Integrated catchment-based approach
- 18 Co-creation with our partners

**WE ARE PROUD TO SUPPORT OUR COMMUNITIES BY GIVING TIME AND RESOURCES TO THEIR IMPORTANT CAUSES**

- 19 Building successful and resilient economies within our regions

**OUR PEOPLE ARE TALENTED, COMMITTED AND INSPIRED TO DELIVER GREAT SERVICES TO OUR CUSTOMERS**

- 20 Providing a healthy and safe place to work
- 21 Our people acting in line with our values
- 22 Providing a great place to work



## **3.3 Reliable and resilient services** continued

### Outcome 6 continued

The following activities also support our Resilience Framework, and demonstrate industry best practice:

- Our new Chief Resilience and Sustainability Officer will use our Resilience Framework and our comprehensive risk matrix to establish a compelling resilience and sustainability vision and supporting strategies for our business, in addition to building resilience leadership across our regions;
- We have aligned our approach to asset management to ISO 55001 and we are one of only a few water companies accredited to this international standard for asset management; and
- We have developed an assessment process to measure the resilience of our operational sites to natural and man-made hazards based on the principles of the international J100 resilience framework, developed for the Department of Homeland Security in the USA.

The following sections present our overall approach to assessing and building resilience through corporate, financial and operational aspects of our business. They then highlight the key activities we will undertake to achieve resilience in the round.

As our Resilience Framework demonstrates, we consider resilience across all of our outcomes, which aligns to Ofwat’s resilience planning Principle 6: Outcomes and customer focused approach.

#### Corporate resilience

To ensure corporate resilience, we will address resilience through our governance and assurance processes, our supply chain and our employees.

#### Governance and assurance

To achieve corporate resilience, we have robust governance, accountability and assurance processes in place. These will help us avoid, cope with and recover from disruption, and to anticipate trends and variability in all aspects of risk and service delivery.

We will continue to demonstrate best practice through publication of our [Assurance Plan](#), which is developed with input and feedback from our customers.

**A** See Appendix 1.2

#### Ofwat IAP test areas

- EC** Engaging customers
- OC** Delivering outcomes for customers
- LR** Securing long-term resilience
- CMI** Targeted controls, markets and innovation


**It’s great to work with a company with a strong track record that prioritises working with suppliers in their region.**

Paul Smedley  
Mott MacDonald

We operate a business-as-usual approach to corporate governance and assurance, as outlined in our Assurance Framework. This is used to ensure that the information and data we provide to our customers and regulators can be trusted. We outline this approach in our Annual Assurance Plan.

Our governance and assurance arrangements cover all areas of our business including operations, planning and regulatory reporting. In developing our plan for 2020-25, we have added further layers of governance and independent assurance.

All of these arrangements are overseen and supported by our Board and its sub-committees.

**287** For more details on our plans for corporate governance and assurance see Section 10: Governance and assurance

#### Supply chain

Our relationships with suppliers support our corporate resilience. We have processes in place to ensure clear accountabilities, good governance and the flow of information between our company and our supply chain partners.

We will continue to improve the resilience of our supply chain by:

- Promoting improvements in workforce skills to support the supply chain by expanding the range of programmes offered by the Run2 Academy. We will also work with our supply chain partners to develop our relationships with universities and other educational establishments;
- Developing a Common Data Environment with our partners to support the more efficient delivery of our design and build phase of projects;
- Continuing to lead on procurement best practice using the Flexible Framework. We will remove any remaining barriers to sustainable procurement by engaging with and supporting our suppliers at the highest level to agree sustainability key performance indicators (KPIs); and
- Sharing good practice with other organisations and reviewing our procurement strategy for 2020-25.

We support the financial viability of our suppliers by encouraging sustainable business models and carrying out appropriate financial checks when awarding contracts. We have a commitment to pay promptly, with special terms for small suppliers.

**171** More detail on how we interact with suppliers and our Run2 supply chain partnership is set out in Section 3.6

## **3.3 Reliable and resilient services** continued

### Outcome 6 continued

#### Employees

The resilience of our people will be a key area of focus for 2020-25. Through our Workforce 2025 strategy we will develop our teams of highly skilled, diverse, innovative and personally resilient people, with the emotional intelligence to respond to our customers' individual needs, supported by our extraordinary leaders.

We have identified six key interwoven strands that will enable us to develop our workforce:

- Extraordinary leadership;
- Great place to work;
- Strategic workforce planning;
- NWG Academy;
- Excellent competence; and
- Future-ready mind-set.

**A** More information about our Workforce 2025 strategy is set out in Appendix 3.5

**A** More information about our extraordinary leadership programme is set out in Appendix 3.1

#### Financial resilience

We provide a full analysis of financeability and financial resilience in Section 8: Aligning risk and reward. However, as financial resilience is a key part of resilience in the round we have also included some of the key points in this overview.

Financial resilience includes considering and mitigating risks relating to our actual capital structure and financing arrangements as well as the impact of potential cost shocks arising from, for example, underperformance against our plans or from additional financial liabilities that are not funded by customers.

In confirming that we are financially resilient, we have given due consideration to our simple capital structure, with no securitisation restrictions, the credit strength and support of our ultimate controlling shareholder and the Board's flexible dividend policy. Our stress testing of the plan has been comprehensive and demonstrates our ability to take action to address potential risks and maintain our investment grade credit ratings.

In order to support our customers' own financial resilience we will provide them with more flexible and personal payment options. We will be making bills affordable for all of our customers through our Inclusivity Strategy and our ambitious goal to eradicate water poverty.

#### Operational resilience

Operational resilience is about providing our current and future customers with a reliable and sufficient supply of good quality drinking water and being able to collect and treat their wastewater and return it to rivers and the sea without adverse environmental effects.

To deliver long-term resilience we need to manage environmental pressures and demographic change and adapt to shifts in customer behaviour. Our infrastructure and our people are also key to our ability to predict, avoid, cope with and then recover from such challenges.

The following section covers eight areas in which we will address operational resilience:

- Long-term planning;
- Growth;
- Environment, climate change and catchment solutions;
- Resilient business systems;
- Asset health;
- Emergency planning;
- Critical site resilience; and
- Water and wastewater resilience.

#### Long-term planning

Developing a long-term approach to managing our operations is key to ensuring we are operationally resilient.

Water companies produce updated WRMPs every five years, statutory documents which must be submitted to Defra, after consultation, ahead of company business plans.

**A** See Appendix 1.2

#### Ofwat IAP test areas

- EC** Engaging customers
- OC** Delivering outcomes for customers
- LR** Securing long-term resilience
- CMI** Targeted controls, markets and innovation

Our WRMPs for 2020-60 were published in September 2018. They focus on demonstrating how we can provide resilient water supplies for our customers without adverse environmental effects. Taking this approach further, we are now aligning our 25 year Long Term Water Quality Plan to our strategic water network planning process.

We welcome the support from our regulators and stakeholders under the 21st Century Drainage programme to develop a concurrent approach for drainage and wastewater planning aligned to Drainage Strategy Framework principles.

Our approach to long-term system planning will ensure that all of our future investment and operational plans align to and support our long-term strategies for water and wastewater services.

Our Integrated Approach will help us apply this and exploit opportunities to collaborate with partners, including other water companies, and to align our approach for water resources, water networks and drainage and wastewater planning, see long-term sections in:

**104** Outcome 7

**125** Outcome 9

## 3.3 Reliable and resilient services continued

### Outcome 6 continued

#### Growth

Alongside climate change, population growth is identified as one of the key challenges that we must prepare for to ensure we continue to offer an effective and resilient service into the future. As a statutory water and sewerage undertaker, we have a duty to extend our networks to support growth in our regions. We must ensure that we are able to do so without compromising the service we provide to existing customers and without having a detrimental impact on the environment. This will involve increasing the capacity of our assets in certain locations.

Due to our favourable water resource position, pressures from growth and new development are primarily focused on the capacity of our water and wastewater assets. To address growth, we have identified 30 water network schemes and six wastewater treatment schemes, including the enhancement of Howdon STW.

**A** For detail on our water network schemes see Appendix 3.2

**A** For detail on our wastewater network schemes see Appendix 3.2

Total costs to enable the pressures from growth for 2020-25 will be £14.4m for water networks and £103m for wastewater networks and treatment.

This investment, which is classed as enhancements in our plan, will ensure we are ready to support new development across our operating areas, without impacting on the level of service for our existing customers. Supporting new development will support regional economic growth. It will also help improve our D-MeX performance by ensuring that we are in a position to accommodate flows from new developments. We will continue to engage actively in the planning process and to work with developers to obtain foresight of areas that are identified for growth.

#### Environment, climate change and catchment solutions

A resilient natural environment underpins the services we provide as a water and wastewater company. We recognise this in our ambitious goals for the environment.

For 2020-25, we are initiating a step change in our environmental activities, which will help us and others within our regions to be naturally resilient. This aligns to Ofwat's planning Principle 2: a naturally resilient water sector.

#### Ofwat IAP test areas

- EC** Engaging customers
- OC** Delivering outcomes for customers
- LR** Securing long-term resilience
- CMI** Targeted controls, markets and innovation

**£14m**

we will invest £14.4m in water networks

**£103m**

we will invest £103m in wastewater networks and treatment

Our Resilience Framework incorporates the challenges of climate change, one of the greatest environmental challenges we face. We take account of the pressures of a changing climate within our long-term planning, including on growth and development, water resources, and our assets that we consider 'too critical to fail'.

By 2020, we will also have addressed the risks from climate change at our operational sites deemed most vulnerable to river or coastal flooding. This is in line with the recommendations made to us in Royal Haskoning DHV's Climate Change Asset Impact, 2012 Update Report. This followed on as an update to a previous asset impact study and subsequent adaptation reporting to Defra, and took account of information arising from additional research across the water industry. We will continue to review and reassess the impact from climate change on our assets, operations and response plans and to engage with the National Adaptation Programme, taking into account the new UK Climate Change Projections (UKCP18) expected in November 2018.

Applying catchment solutions to address the challenges we face, and undertaking more cost-effective partnership approaches to delivering our services, will also help us build environmental resilience.

For 2020-25, as part of our step-change in environmental activities, and to help us meet our ambitious goal to demonstrate leadership in catchment management, we are committed to taking a catchment-based integrated approach to delivering water and wastewater services, joining up planning and agreeing shared objectives with partners for better management of all our catchments. We are also expanding the scale of our catchment management activity to protect raw water.

**115** For detail on our catchment approach to protecting raw water, see Outcome 8

#### Resilient business systems

Cyber security resilience is the overarching term to describe the 'confidentiality, integrity and availability' of our computer systems and the protection of our information from both malicious and accidental acts. Ensuring the security of our systems and information is paramount for managing our systems and delivering our services. We take our responsibilities in this area very seriously.

Compliance with the General Data Protection Regulations (GDPR) and Network Information Systems Directive (NIS-D) protects our critical infrastructure as well as employee and customer data from cyber threats. We ensure that our computer systems and information are secure by focusing on security, data and people. This is achieved by embedding good

## **3.3 Reliable and resilient services** continued

### Outcome 6 continued

cyber security practices throughout the entire business, and by preparing for ‘when’, not ‘if’. We benefit from an award-winning Cyber Security team that continues to develop innovative approaches in this area.

In the light of new government advice and evidence that the water sector is increasingly being targeted by hostile foreign state and cyber criminals, it is imperative that our cyber security capability is enhanced to mitigate against this constantly evolving threat.

Every new information technology and operational technology system is built with security in mind. New systems such as our customer contact billing platform are designed to ensure data is encrypted where technically possible, and consideration is given to hosting services on highly resilient and secure platforms. We have continued to invest in security systems and resources to deal with this risk, including the use of external specialists to regularly test our capabilities.

Investment in cyber security is not only about protecting business processes; it is also about enabling the business to innovate to support our customers into the future. Increased reliance on technology means appropriate security investment is imperative across the organisation so that we can continue to conduct routine business functions.

#### Ofwat IAP test areas

- EC** Engaging customers
- OC** Delivering outcomes for customers
- LR** Securing long-term resilience
- CMI** Targeted controls, markets and innovation



**We benefit from an award-winning Cyber Security team and we will further enhance our cyber resilience at a cost of £14.5m.**

Between 2020 and 2025 we will deliver enhancements to our cyber resilience capability at a cost of £14.5m.

The activities we will carry out include:

- Developing our long-term cyber resilience strategy and plan. Our strategy aligns with best practice set out in NIS-D and will focus on the best ways to identify, protect, detect, respond and recover;
- Continuing to train and test our people in information technology, operational technology and cyber security;
- Creating a Security Operation Centre, to identify threats, provide early warnings and increase our visibility and response capability during incidents;
- Continuing to use industry and government expertise to make sure that we remain flexible to cope with the challenges of a quickly changing threat landscape and advances in innovation and technology; and
- Continuing to support and to participate in multi-agency, regional cyber resilience exercises such as ‘Operation Skynet’ (which took place in February 2018). This exercise tested the effects of a simulated ransomware attack on a number of local government agencies and utilities, including NWL.

This investment will improve our cyber resilience by ensuring our operational and information system security is

‘one step ahead’ of the capabilities of those wishing us harm or those with the potential to do accidental harm by impacting our ability to deliver our service to customers.

**A** See Appendix 3.2

#### Asset health

We have identified 11 asset health measures for 2020-25 and these are:

**Interruptions to supply >12 hours:** Longer duration interruptions are indicative of the health of our strategic network assets.

**Unplanned outage:** Being unable to maintain supply at planned levels depends on the health of our abstraction and treatment assets.

**Mains bursts:** The number of mains repairs we carry out is indicative of the condition of our water network.

**CRI:** Complying with water quality standards depends on the health of our water treatment processes and assets.

**Discolouration:** The quality of water at customers’ taps is indicative of the condition of our water network.

**Taste and smell contacts:** The quality of water at customers’ taps is indicative of the condition of our water network.

**ERI:** The risk of water quality events shows how reliable our treatment and network assets are.

**Repeat sewer flooding:** When a property is affected by sewer flooding on a repeated basis this suggests a systemic failure of the asset base.

**Sewer collapses:** The number of collapses occurring in our sewers is indicative of the condition of our sewers.

**Sewer blockages:** The number of blockages occurring in our sewers is partly indicative of the condition of our sewers.

**Treatment works compliance:** Where we are able to comply with our discharge consents this demonstrates our treatment assets are in good working order.

These measures capture aspects of asset health across our asset base. However, there is recognition across the industry that more work is needed to improve the way we measure asset condition over the long term. We are committed to working with the industry to further develop more sophisticated measures of asset health.

Having a more sophisticated and detailed way to measure the health of our assets will help build resilience within our business. We are in the process of compiling a ‘state of our assets’ report which will be the baseline against which we will review and monitor future asset health.

## 3.3 Reliable and resilient services continued

### Outcome 6 continued

We explore good practice in measuring asset health in other organisations, through the Institute of Asset Management, and through contacts within and outside the water sector. This includes looking at the progress that has been made in asset health and asset management in the energy sector in particular.

Our Intelligent Asset Management (IAM) business transformation programme will deliver enhanced data and information, new systems and aligned processes for all activities. This includes the development of a new capability of Reliability Engineering which will use these improved and reliable data sets to determine asset health metrics and support decision making on asset interventions.

**241** Further detail can be found in Section 7

#### Emergency planning

Our emergency planning and recovery capabilities are divided into three discrete areas of focus – secure services, emergency response and recovery, and business continuity.

We measure our resilience by our ability to maintain our services to customers and protect the environment when dealing and recovering from extreme and challenging events such as regional power failure, asset failures, malicious damage and fire.

Our emergency planning is continually

improved by learning from the experience of others.

From 2020-25, we will deliver improvements to our emergency planning and security capability at a cost of £21.2m. Some of these improvements are as a direct result of our learning from the industry response to the ‘freeze thaw’ and dry weather of 2018. This investment is classed as an enhancement within our plan.

**A** See Appendix 3.2

These improvements will:

- Make sure that our 24 most critical, above ground wastewater assets are protected to Water UK Security Standards in line with our obligations under the Security and Emergency Measures Directive (SEMD);
- Further improve security at 128 of our service reservoirs;
- Improve our water tankering capabilities by increasing our fleet size and the number of filling points across our regions;
- Increase our static tank capacity by 53% above our expected 2020 capability. This will enable us to provide alternative water supplies to more than 100,000 customers in the event of an emergency; and
- Improve our fuel storage capacity across our regions to make sure that we always retain a minimum of ten days of fuel should our supplies be disrupted.

#### Ofwat IAP test areas

- EC** Engaging customers
- OC** Delivering outcomes for customers
- LR** Securing long-term resilience
- CMI** Targeted controls, markets and innovation

**£21m**

we will deliver improvements to our emergency planning and security capability worth £21.2m

**53%**

we will increase our capacity by 53% to provide alternative water supplies to more than 100,000 customers in an emergency

We will align our business continuity approach to ISO 22301 (International Business Continuity standard). We aim to be the first water company to achieve company-wide accreditation in 2019 so that customers and regulators can have confidence in our ability to plan, prepare and respond to a business continuity event, with minimal impact to the service we provide our customers. We will also implement specialist software to better manage our Business Continuity Programme across our business.

#### Critical site resilience

There is an expectation that water companies consider all possible risks that can impact on their ability to deliver the levels of service and resilience customers want. This includes risks often beyond the control of the incumbent water company such as the impact from climate change and the threat from cyber terrorism and crime.

We identified 63 water sites across our operating areas that we deemed ‘too critical to fail’. In total these sites could cause loss of supply to more than 942,000 properties. The number of customers impacted is far greater than our current incident management capability to ‘respond and recover’ from a loss of one of these sites.

We worked alongside Arcadis Consulting to undertake site assessments. A methodology developed by Arcadis was recognised by Ofwat as a best-practice approach to assessing risk and measuring resilience across water sites. Using this methodology we reviewed our risks at these sites from extremes of temperature, flooding, fire, malicious damage, cyber threats and loss of power supply.

As part of the review we:

- Assessed current resilience controls (base resilience position); and
- Identified those sites where further resilience measures could be implemented to improve the overall resilience score (future resilience position) and reduce the likelihood of a hazard impacting the operation and availability of the site.

**A** See Appendix 3.6

Many of the resilience interventions are site specific. All align to the four resilience principles of redundancy, reliability, resistance, and respond and recover. This ensures that we only deliver the intervention that offers the best resilience benefit per pound, and that we balance capital investment with operational response.

## 3.3 Reliable and resilient services continued

### Outcome 6 continued

From 2020-25, we will deliver a programme of enhanced resilience interventions to address known resilience shortfalls and increase overall site and system resilience to natural and man-made hazards at these 63 operational sites.

**A** See Appendix 3.2

This site specific investment could include installation of permanent flood protection, additional backup power generation capacity and enhanced fire protection systems, as well as improved emergency response plans that are hazard/risk specific.

“ NWL aims to impress customers with excellent service, at a fair price. Arcadis recognise and share this value. In support of these common values we worked together to implement an innovative methodology to assess resilience of our critical sites. Cited in Ofwat's consultation paper itself, this practical benchmarking mechanism evolves the regulator's thinking and assesses water and wastewater systems against the potential threats they could face, such as flooding and security concerns. The consequence-led approach was designed to be customer centric, considering how hazard events could have a material impact on supplying customers with clean, clear drinking water that tastes good. ”

**Olu Eriolu**  
Associate, Risk and Resilience Lead, Arcadis

#### Ofwat IAP test areas

- EC** Engaging customers
- OC** Delivering outcomes for customers
- LR** Securing long-term resilience
- CMI** Targeted controls, markets and innovation

“  
**We have very secure water resources with a projected surplus for at least the next 40 years.**”

### Battling the Beast from the East

Despite the dramatic freeze thaw from the 'Beast from the East', lessons learned from previous extreme weather events meant minimal impacts on our customers.



**Our rigorous approach to winter planning, and committed workforce ensured that our sites were always manned and operational.**

The vast majority of our customers' water supplies were fully restored within four hours. Only 0.05% of our customers experienced supply interruptions that lasted more than four hours, making us one of the top performing water companies in the country.

Ofwat recognised that our customers experienced no significant disruption, commenting:

“Better performing companies, such as NWL, demonstrated resilience in their systems to increase production and move water to where it was most needed” (Out in the cold, 2018).



## 3.3 Reliable and resilient services

continued

### Outcome 6 continued

#### Water and wastewater resilience

In developing our plan, we have undertaken a number of appraisals across our water and wastewater sectors to better understand our current resilience position and determine which enhancement schemes to undertake from 2020-25.

Our appraisals have included a mixture of:

- Current system issues identified and captured within our Asset Management Plan system;
- Technical reports and studies (both in-house and through consultancy support);
- Workshops using in-house technical expertise;
- External discussions with partners through our Thinking Ahead workshops and the NIDP;
- Design sprints including at our annual Innovation Festivals;
- Long-term strategic plans; and
- Customer engagement sessions across all our operating areas.

Within our appraisals, we took into account our customers' expectations and priorities in relation to risks and their consequences.

These appraisals, which have been subject to both internal and third party assurance have allowed us a better understanding of those areas of poor resilience and high risk within our water and wastewater systems.

#### Ofwat IAP test areas

- EC** Engaging customers
- OC** Delivering outcomes for customers
- LR** Securing long-term resilience
- CMI** Targeted controls, markets and innovation

The results have shown that:

- Our water resources are very secure with every WRZ in Essex, Suffolk and the North East projected, on baseline scenarios, to have a surplus for at least the next 40 years, even during a 1 in 200 year drought;

**104** See Outcome 7

- Our ability to fully utilise these resources through our existing strategic transfer network has limitations in some areas. We now want to focus on ensuring that even in the most challenging of circumstances we can get raw water to where it is needed and then treat and distribute the water with equally high levels of resilience across our network of pipes and reservoirs; and

**104** See Outcome 7

- During a 1 in 50 year rainfall event, approximately 35.17% of our population in our NW operating area is at risk of flooding. We will address this situation through investment in our wastewater resilience schemes.

**125** See Outcome 9

The enhanced resilience schemes we include in this plan were presented to our customers **23** See Section 2.1.2 and all have strong support from our customers, with acceptance scores of between 67% and 100%.

**A** See Appendix 2.2

**A** See Appendix 3.2

The options appraisal process reviewed each scheme against all of Ofwat's resilience planning principles, focusing in particular on Principle 3: customer engagement; Principle 4: broad consideration of intervention options; and Principle 5: delivering best value solutions for customers.

In total we will invest £216.74m in enhancement schemes for resilience in 2020-25.

**104** Our resilience schemes for water and wastewater and the ways in which we will measure our resilience performance for these areas are covered in Outcomes 7, 8 and 9.

#### How we will measure operational resilience

The remainder of this chapter includes the detail of how we will improve the resilience and reliability of our water and wastewater services, including the wide range of performance measures which will all contribute towards continually improving our resilience.

The measures which we consider to be the lead indicators of operational resilience are:

- Percentage of population at risk of experiencing severe supply restrictions in a 1 in 200 year drought;

**115** Further detail can be found in Outcome 7.

- Percentage of the population at risk of flooding in a 1 in 50 year rainfall event;

**133** Further detail can be found in Outcome 9.

- Event Risk Index;

**124** Further detail can be found in Outcome 8.

- Interruptions over 12 hour; and

**112** Further detail can be found in Outcome 7.

- Repeat sewer flooding.

**132** Further detail can be found in Outcome 9.

The first two of these measures are 'common' measures which are being introduced by Ofwat. These are about measuring risk of service failure rather than simply measuring failure. This will help us to increase our focus on anticipating threats and preventing significant service failures rather than reacting to incidents as they occur.

Our 'bespoke' resilience measures of the ERI, Interruptions over 12 hours and repeat sewer flooding were selected to help us respond to the particular resilience challenges we face in our operating areas.

We know that climate change will put increasing pressure on our ability to prevent sewer flooding incidents from recurring, and that we have opportunities to further improve the connectivity of our water supply network in order to reduce the risk of severe supply interruptions.

Inclusion of ERI, complements the interruptions measure, by assessing the ability of our supply systems to cope with abnormal circumstances from a quality perspective.

All three of our bespoke measures will reveal how well we are responding to potentially high impact threats when they materialise. Improving performance in these areas will show that we are identifying risks in advance and preventing threats to service from developing into significant service failures.

## **3.3 Reliable and resilient services** continued

### Outcome 7

# We always provide a reliable supply of water.

### Why this outcome is important

Our customers expect that water will flow when they turn on the tap, and that they should not be affected by shortages of water. Providing a reliable supply depends on us planning for the future, abstracting from sustainable sources of water, and using water wisely (Resilience, 2016; Service Measures, 2017).

Our customers rely on this continuous source of water to meet their daily needs, so any interruption to water supply can cause real inconvenience. This is of particular importance for our customers who need additional help and support, and those who have a medical condition or young children, as well as for businesses that rely on water.

Burst water mains cause disruption to our customers through supply interruptions, discolouration and pressure issues. They can also cause property damage and disrupt infrastructure and transport networks. Our customers expect us to maintain our water supply networks to avoid issues and to minimise inconvenience for their households and communities.

Leakage increases the amount of water we need to treat and the amount of energy and chemicals used to clean and transport water.

### How our customers' views have shaped the plan

Our customers expect that preventative maintenance and renewal work should be ongoing to ensure a reliable water supply (Resilience, Asset Health and Long-term Affordability, 2018).

Our customers have told us that dealing with interruptions to supply is a top service priority (Service Valuation, 2017). We have listened to them and included stretching PCs within our plan to make sure that we are industry leaders in responding to interruptions if and when they do happen.

#### Ofwat IAP test areas

- EC Engaging customers
- OC Delivering outcomes for customers
- LR Securing long-term resilience
- CMI Targeted controls, markets and innovation

We believe that our customers especially lose confidence when interruptions are repeated. We are therefore introducing a more stringent interruptions bespoke measure which will help us to improve the level of service we provide. This will help us demonstrate leadership in this area and drive the industry forward.

Our customers have made it clear to us that they think our leakage levels are too high (Metering, Supply and Demand, 2017; Service Measures, 2017). In response we have set an ambitious goal to have the lowest levels of leakage in the country in our water-stressed ESW operating area.

The speed with which we repair leaks has a profound impact on how well our customers think we are doing at setting an example in reducing wastage, which then influences how they use water in their homes. Being slow to fix leaks can make customers feel their efforts to be water efficient are futile, as the scale of waste from a leak seems so much greater than the amount they can save by using water wisely. In response, we have introduced a new PC to measure and improve our response to visible leaks.

This measure will also help us address mains bursts, which our customers link to interruptions and damage to the environment, property and transport links (Service Measures, 2017), and which can cause great inconvenience to communities.

Our customers have told us that they would like us to do more to help them use water wisely. They see it as our role to provide them with the information, advice, tools and incentives they need to save water through a variety of communication tools (Metering and WRMP research, 2018). Our new challenging targets for leakage and PCC will support our increased engagement with customers around water efficiency.

### What our plan will deliver for customers

Our aim is to give our customers confidence that they can always depend on a constant supply of water to meet their needs, both now and in the future.

#### Long-term context

Our WRMPs demonstrate how we will make sure that we provide resilient water supplies for our customers over the long term, to 2060.

Our latest draft WRMPs for our operating areas look ahead 40 years ( [A](#) See Appendix 1.2). The plans adopt a twin track approach by improving the resilience of water supplies to meet forecast demand and required supply capacity in conjunction with targeting leakage levels, increased meter penetration and delivery of water efficiency plans.



## 3.3 Reliable and resilient services continued

### Outcome 7 continued

The Supply Demand Balance graphs presented in the draft WRMPs for each WRZ look at a number of factors including:

- How much water will be available in a design drought year;
- How much water a company can treat and distribute through its network;
- How much customer demand there will be;
- How much ‘target headroom’ is required to take account of uncertainties in our supply and demand forecast; and
- Whether a water company is meeting its specific target(s) for headroom, taking account of risks including the temporary loss of a water resource.

Where actual headroom is greater than target headroom, a company can meet its planned level of service and its Security of Supply Index (SOSI) score is 100. Based on our draft WRMPs, we forecast that all of our WRZs will have a supply surplus and so the SOSI score for all of our WRZs in our operating areas will remain at 100 until at least 2060. We have also demonstrated our resilience to a 1 in 200 year drought scenario.

**A** See Appendix 1.2

The security of supplies for customers in our NW operating area is due in large part to the reserves available from Kielder Reservoir which can be transported through the Kielder Transfer System, a giant pipeline that can feed into the rivers Tyne, Wear and Tees. Similarly, in Essex, our customers can now enjoy peace of mind that there is plenty of water to keep them in supply for years to come since the completed expansion of Abberton Reservoir in 2014.

Our Suffolk WRZs also have a small surplus in our baseline scenarios. We plan to continue to increase connectivity between these rural zones to increase resilience. We will continue to discuss with Anglian Water possible opportunities for small-scale trades in either direction, for instance whether we could provide some support into Norfolk. The volumes would be relatively small but could nevertheless be significant in a resource constrained region.

As we have a supply surplus, we recognise that we are in a position to support other companies and their customers through water trading. In line with Ofwat’s guidance, we have published data tables enabling third parties to identify opportunities to provide new water resources, or offer alternative demand management services.

**229** This is discussed in more detail in Section 6

We are fully committed to ensuring that our abstraction of water from rivers, surface water reservoirs and underground reservoirs to supply drinking water to our customers will not cause harm to the environment. To go towards addressing this, a new measure, the AIM, will be introduced for 2020-25 for our abstractions from the Norfolk Broads.

**150** See Outcome 11

Building on the benefits a long-term water resource planning process provides, we will further develop our ‘system thinking’ approach for long-term system resilience, operation and investment by delivering long-term strategic network plans (25 years) for all of our regions by 2025. We delivered our first strategic network plan, covering our Tees network, during 2017. This proved the value this approach provides when developing our approach to long-term resilience planning. Our long-term strategic network plans align to our WRMPs and our Long Term Water Quality Plan.

#### Ofwat IAP test areas

- EC** Engaging customers
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- CMI** Targeted controls, markets and innovation

**“**  
**The SOSI score for all of our WRZs will remain at 100 until at least 2060.**

#### Business plan priorities

Understanding our customers’ views has allowed us to identify three key priorities for providing reliable supplies for 2020-25 and beyond:

- Leading the way in maintaining supplies;
- Reducing wastage; and
- Building resilience.

#### Leading the way in maintaining supplies

We plan to go above and beyond our current industry-leading position through continually improving the level of service we give to customers in maintaining uninterrupted supplies. In support of this, we will reduce the number of supply interruptions, outages and bursts across our supply areas.

#### Supply interruptions

As the industry leader for interruptions to supply since 2012, we have demonstrated strong operational resilience. Our focus has been on maintaining supplies to customers as the first priority over and above resolving the root cause of the interruption. We intend to continue to lead the industry with the lowest interruptions to supply, and plan to raise the bar even further than this to solidify our position as the frontier company on interruptions performance.

## **3.3 Reliable and resilient services** continued

### Outcome 7 continued

Most interruptions to supply occur as a result of failures in the water distribution network. Reducing the length of these interruptions depends mainly on:

- How quickly we respond;
- Whether we can move water from another area to maintain supplies; and
- Whether temporary supply options can be used.

For 2020-25, we will focus on reducing our response time to interruptions by reviewing our operational logistics. We will make adaptations to the network so that temporary supplies can be restored to customers' taps in even more situations. We will also continue to install valves at critical points to support rezoning the network when this is required.

We propose to improve our data capture by building up the level of real-time pressure monitoring we have in the network. This will allow us to establish with greater accuracy when water pressure is lost and regained at the beginning and end of an interruption. Using improved data to respond to interruptions more quickly reduces our reliance on customers as a source of information and enables us to keep them more informed when they do experience an interruption.

In addition to the industry common measure, we will introduce two additional bespoke measures for supply interruptions for 2020-25. This will help us to reduce both the occurrence and duration of all supply interruptions – whether they are long or short. The number of interruptions lasting more than 12 hours will be used as an asset health indicator.

#### Unplanned outage

Unplanned outage (or an unforeseen unavailability of flow) at our water treatment works (WTW) is an indicator of asset health and resilience for water abstraction and water treatment activities. As our SOSI position is excellent across all of our supply areas, our plan is to monitor the performance of our WTWs closely and to ensure that our proactive maintenance regime and prioritised investment at our sites reduces the likelihood of an unplanned outage from occurring, particularly where this is at a critical location. Our objective is to reduce our unplanned outage by 10% over 2020-25.

#### Ofwat IAP test areas

-  Engaging customers
-  Delivering outcomes for customers
-  Securing long-term resilience
-  Targeted controls, markets and innovation

# 10%

our objective is to reduce our unplanned outage by 10% over 2020-25

#### Mains bursts

Mains bursts can inconvenience customers and have a direct impact on service. Although we currently have an above-average burst rate, we have successfully managed the impact of this on interruptions and leakage, as demonstrated by our leading interruptions performance and excellent leakage performance in our ESW operating area.

Our previous position has been that maintaining bursts at a constant level indicates that asset health is stable. However, with our plans to make a further step change in both interruptions and leakage performance, it is now appropriate that we reduce our burst rate to a new level which matches the forecast upper quartile (top 25% of companies) industry level of mains bursts. To support us in achieving this stretching target we will further improve our data collection and validation process, aligning to the agreed industry methodology by 2020.

We will carry out both traditional and innovative activities to counteract network deterioration and prolong asset life to protect future services for customers.

In 2020-25 we will:

- Invest to manage water pressure across our networks to improve reliability. Network analysis has identified which parts of our network have excess pressure and present opportunities for possible pressure reductions. We work to a minimum level of 18m pressure which is above the industry minimum standard of 15m. We have estimated the total burst and leakage benefit that will be realised from these pressure reductions. The estimated impact on mains bursts is substantial, especially in our NW operating area;
- Tackle the cause and impact of 'pressure transients'. Transients are very short sudden spikes in pressure that pass through our network and are believed to accelerate pipe failure and cause mains bursts. We will identify where transients are causing issues, locate the source and implement an appropriate solution. We will also take transient analysis and management to the next level, undertaking more sophisticated transient source tracking, creating transient risk maps and identifying the features that make a transient particularly damaging to pipes of different sizes and materials; and



## 3.3 Reliable and resilient services

continued

### Outcome 7 continued

– Continue our proactive mains renewal programme. We will renew 251km of the network in our NW operating area and 145km of the network in our ESW operating area to reduce the number of burst mains impacting our customers. This work will include the replacement of longer lengths of main across our network to ensure long-term network sustainability. It will also encompass the renewal of relatively short sections of main in problem areas, an approach proven to help maintain a stable burst performance. We prioritise our investment in this area using the outputs of our network deterioration models.

#### Reducing wastage

We will do more to reduce the 'wastage' of drinking water in the forms of leakage and excessive water use by customers. This will contribute to maintaining reliable and resilient supplies for the long term. It will also benefit the environment by reducing the amount of water we need to treat, thereby reducing the amount of energy and chemicals used to treat and transport water.

#### Ofwat IAP test areas

- Engaging customers
- Delivering outcomes for customers
- Securing long-term resilience
- Targeted controls, markets and innovation



**Reducing leakage in our ESW operating area by 17.5% and by 15% in our NW operating area.**

**4bn**

we aim to save 4.75 billion litres of water a year using big data analysis

#### Managing leakage

We constantly challenge ourselves to find new ways to manage and reduce leakage and we know this matters to our customers. Our ambitious goal is to have the lowest leakage levels in the industry in our water-stressed ESW operating area.

The industry has historically used the sustainable economic level of leakage (SELL) to set leakage PCs.

As we have now reduced leakage to these levels, a more appropriate approach for the long term is for targets that drive our efforts to find more economical ways to reduce leakage, rather than present-day economics driving our future leakage targets. This means that we must find innovative and affordable ways to reduce leakage while continuing to monitor the economic picture and recalculating the SELL.

We measure, report and set leakage performance targets separately in our operating areas because of the difference in the availability of water resources and the impact this has on the SELL. In 2020-25, we will start our journey towards achieving our ambitious goal by reducing leakage in our ESW operating area by 17.5% and by 15% in our NW operating area.

### Big data joins the battle on water leakage

We are using insights provided by big data to dramatically reduce the amount of water wasted through leakage.

**Leakage is one of the biggest challenges for the water industry, with billions of litres of treated water lost before it reaches customers' taps.**

In a breakthrough for the water industry, we have developed a 'heat map' technique to pinpoint where pipe repairs are needed most and identify the most problematic areas in our system.

The heat map idea came out of the Leakage Hackathon at our 2017 Innovation Festival, in which 60 data scientists spent three days crunching 55GB of data from a wide variety of sources, ranging from existing information on leakage and ground structure, to road traffic statistics and Second World War bombing records.

After the Innovation Festival, we continued to work with data professionals PA Consulting and lSpatial to develop the heat map idea.

The first stage of the work involved collaborating with PA Consulting to categorise areas based on characteristics (such as pipe size, location, material, soil type) and historical performance (technician survey efficiency, burst frequency/response). This will be used to determine the best approach in tackling leakage in problematic areas, thereby moving away from the 'one size fits all' approach. We have recently used this technique to identify where to deploy 4,000 new correlating noise loggers, and are awaiting the first round of analysis from the field.

In the second stage, we are working with lSpatial in Essex to pilot this approach, integrating the heat map with our existing mapping software, and using it to direct resources more effectively and efficiently to prioritise finding and fixing the biggest leaks. We will also look to use the layer for large-scale mains replacement work and more detail when targeting specific areas. This will allow us to achieve the best possible reductions in water loss and reduce leakage levels to the lowest in the country.

Our past approach to leakage has been to fix as many leaks as we can find in one area before moving on to the next location. The heat maps will lead to smarter, better-informed deployment of resources to make a much bigger impact. We will cover each area more quickly, finding more leaks faster, and significantly reducing the volumes of water lost from our network. Our aim is to save 4.75 billion litres of water a year by using this new methodology alongside existing techniques.

Once mastered, this new data-driven technique could be rolled out across the sector, and has the potential to revolutionise the water industry's approach to tackling leakage.

## 3.3 Reliable and resilient services continued

### Outcome 7 continued

To meet these stretching targets, we will invest in proactive leak detection. We will recruit additional resources to enhance our leakage detection capability, carry out more repairs faster, and reduce average leak run times. We will test innovative techniques to detect leakage within our network, including the use of drones, data science technology and leakage sniffing dogs. We will also make greater use of correlating noise loggers, to enable us to locate leaks more precisely and more quickly when we survey an area.

Our mains replacement programme and pressure management plans described previously will also support leakage management as we aim to maintain a stable network and prevent bursts and leaks from occurring in the first place.

From 2020 we plan to introduce a new bespoke measure to improve the speed at which we repair customer-reported visible leaks. Significantly reducing our response and repair time to visible leakage will reduce both leak run times and overall leakage rates.

### Water use by customers

The amount of water used by customers is measured through PCC. This is the average person's usage each day, and includes leaks on internal plumbing within customers' premises.

Water usage in the UK is relatively high compared to other European countries, partly reflecting confidence in the quality of our tap water. However, given the water resource constraints that a large proportion of the country face, current water consumption in England and Wales is viewed as too high by the UK Government. Current water usage is 143.96 litres per person per day (l/p/d) for our NW operating area, and 153.25 l/p/d for our ESW operating area.

Water usage however varies significantly, and it is clear that there are many ways in which drinking water is not used effectively. We recognise that we need to work more closely with our customers to reduce the average amount of water that is consumed, and that our customers want us to do more in this area. We have therefore set an ambitious goal to have a PCC for water use of 118 l/p/d by 2040.

### Ofwat IAP test areas

-  Engaging customers
-  Delivering outcomes for customers
-  Securing long-term resilience
-  Targeted controls, markets and innovation

**118 litres**

our goal is to have a PCC for water use in our regions of 118l/hd/day by 2040

**50,000**

home audits each year will include free repairs

For 2020-25 we will build on our existing Every Drop Counts initiative and whole town approach to scale up our industry-leading water efficiency work to a level of activity that is five times greater than our current level. We will offer a water and energy saving visit to every household, focusing first on our customers who are most in need of this additional support. We will carry out 50,000 home audits each year, which will include free repairs to fix leaking toilets and taps. We will also visit 400 schools a year to educate children about the importance of using water wisely. This will enable us to meet our water efficiency target.

Our initiatives will include:


- Expanding our 'Leaky Loos' campaign, which educates customers about the significant problem of leaking toilets and offers a free test and repair service; and
- Introducing smart meters to enable us to develop digital water efficiency engagement and more personalised water efficiency advice, which customers can access through a website and app. For those who do not wish to use these platforms, we will identify other ways of proactively providing our customers with insights about their consumption, including leak alerts.

 See Section 3.2

We want to empower all of our customers to participate in reducing wasteful use of water. This links in with our ambitious goal to give every single customer the opportunity to have a strong voice and engage with us, with at least 2m customers participating by 2025.

We are aware that for some customers there will be substantial scope to reduce their water consumption, while others may already be very water efficient. Our customers have highlighted that they want us to be supportive but not 'pushy' about reducing water consumption (Behaviour Change and Funds, 2017; Tariff Structure, 2018). In particular, we will take care to make sure that our strategy is sensitive to the needs of customers whose circumstances mean they need to use more water than average.

Water meters offer customers choice and information, allowing them to better manage water use and costs.

 More information about our plans to support customers with water meters, tariff changes and reducing water poverty can be found in Section 3.2

## **3.3 Reliable and resilient services** continued

### Outcome 7 continued

#### Building resilience

We will improve the interconnectivity and transfer capability across our strategic raw and potable water networks.

Following our appraisal of risks and current system resilience across our water service we have identified a number of enhanced investment schemes which start to address this and will deliver improvements to the reliability and resilience of our services.

The following sections introduce our plans for delivering an improvement in water supply resilience within our operating areas.

#### Northumbrian Water operating area

In the North East we have abundant water resources backed up by our Kielder reservoir. We can transfer water between the main rivers across the region to ensure availability of raw water at our treatment works. Only around 1% of our NW population, in the Berwick WRZ, cannot benefit from Kielder. Between 2015 and 2020 we are investing significantly to improve the reliability and resilience of the Berwick borehole abstraction and treatment systems to provide resilient water supplies to customers in this rural area.

For the Kielder resource zone, although we have plenty of raw water and sufficient treatment capacity, the river valley based nature of our operational networks often limits our ability to transfer surplus treated water across our networks. This lack of transfer capability increases our vulnerability to a major loss of supply scenario in the event of a catastrophic loss of a major treatment works.

Our ambition is to create a fully integrated potable water grid system across our NW operating area by 2045. This grid will complement the current resource resilience we have within the Kielder Raw Water Transfer system, and address the current restrictions in water transfer capability across the region.

In 2020-25 we will invest £128m to deliver our water resilience plan for this area. This includes 18 enhanced resilience schemes at a cost of £97m, with the remaining £31m funded from our 2020-25 base capital plan. This will improve security of supply and reduce the risk of interruptions to supply for more than 535,000 properties. We will:

- Improve treatment capability, including full 'run to waste' functionality at Mosswood WTW to manage increasing cryptosporidium risk from raw water sources and protect against asset failure risks. This will provide a more secure source of supply where no alternative currently exists and will directly benefit over 170,000 properties;

#### Ofwat IAP test areas

- EC** Engaging customers
- OC** Delivering outcomes for customers
- LR** Securing long-term resilience
- CMI** Targeted controls, markets and innovation



**A fully integrated potable water grid system across our NW operating area by 2045.**

**£128m**

we will invest £128m to deliver our water resilience plan for our NW operating area

### Award-winning water efficiency customer initiative



**Everything we know about delivering successful water efficiency programmes tells us that effective customer engagement is absolutely fundamental to delivering sustainable behaviour change and achieving water savings.**

Engaging with our customers – whether that is through face-to-face conversations, digital innovations or community-based activities – is the key to improving water efficiency, and of equal importance to providing water saving products.

Every Drop Counts is our award-winning water saving campaign. It was designed to be genuinely different, working at community level to focus on target areas, and offering customers in these areas the chance to participate in a range of linked initiatives.

By joining up our water saving initiatives and focusing on a whole community, we are able to engage better with a larger number of customers, and this offers many more opportunities to bring about long-term behaviour change and increase participation.

Through Every Drop Counts, we have engaged with more than 18,200 households in eight towns since 2016. This includes plumber-led home water and energy saving retrofit visits that allow open, face-to-face conversations with customers about using water wisely. It also includes taking stalls on main streets and in shopping centres, our Super Splash Heroes visits to primary schools, and engagement through our website and social media.

In spite of our successes, we recognise that we still face a huge challenge to achieve our ambitious goal to have a PCC of 118 by 2040. It is therefore crucial that we benefit from innovations that may open the door for effective engagement with a very broad range of customers.

By drawing on our research with leading academics in the field of behavioural economics, we plan to build an innovative digital engagement platform incorporating creative incentive schemes and using smart technologies. In doing so, it will be possible for customers to see their water consumption in real time. This will also enable us to offer bespoke water efficiency advice, information and solutions.

Our Every Drop Counts initiative will be linked to our other community-level water management schemes as part of our collaborative communities ambition, linked to our #wearefamily and Live well locally initiatives.



## 3.3 Reliable and resilient services

continued

### Outcome 7 continued

- Construct new storage capacity at Springwell, Gateshead, and improve the interconnectivity of our Wearside network. This will reduce the risk of an interruption to supply following an issue at a treatment works, a failure of a strategic water main or a supply restriction due to changing raw water quality. This investment will directly benefit over 99,800 properties currently not supplied from strategic storage as well as providing additional long-term security of supply to a further 200,000 properties in the wider Wearside area. This scheme is supported by the DWI;
- Construct a new 55Ml/day pumping station at Shildon service reservoir to provide a secondary supply source from Teesside into our Central zone. This will provide a secondary source of supply to over 70,000 properties currently fed from a single treatment works and trunk main;

- Lay 53km of new main to reduce the risk of a trunk main failure impacting water supply and also improving our water transfer capability between Tees and Central zones. This will directly benefit over 255,000 properties in Teesside. We will also install a number of additional strategic mains reinforcement schemes, including automated flow control, as part of our long-term operational plan for the Tees network. The DWI has supported the elements of this scheme that will improve drinking water quality;
- Provide a secondary source of supply to 71,000 properties in Darlington and Whitley Bay that are supplied from single trunk mains with no alternative supply currently available; and
- Improve overall site and system resilience to natural and man-made hazards at 36 of our water sites deemed to be ‘too critical to fail’. These sites provide water supply to over 447,000 properties in total.

#### Essex & Suffolk Water operating area

Essex already has a very integrated treated water network with high levels of resilience built in. We can continue to maintain supplies to customers for some time even with any large treatment works being out of supply.

We have invested £150m to increase the capacity of Abberton reservoir near Colchester. Abberton is now able to receive water from much further afield and has plenty of water available for use, so raw water resources are very secure.

However, we currently have limited ability to freely move this raw water between our key Essex treatment works and have also started to experience changes in raw water quality from the enlarged Abberton catchment. This is impacting our ability to effectively use our existing treatment capacity now and in the future.

We plan to address these risks and improve raw water transfer capability between Abberton and Hanningfield as well as improve treatment capability to deal with the changes in water quality from our Abberton catchment. This brings raw water transfer flexibility to Essex and is the final link in creating a highly resilient and integrated water system.

Our Suffolk area of supply is very rural and sparsely populated, with limited connectivity between WRZs. We are part way through a long-term plan to increase connectivity and resilience across our North Suffolk region. In the next five years we will further improve connectivity between zones and build new storage to enhance the resilience of our network in Suffolk.

In 2020-25 we will invest £66m to deliver six enhanced resilience schemes in Essex and Suffolk. Our water resilience plan improves security of supply and reduces risks of an interruption to the water supply for more than 621,000 properties.

#### Ofwat IAP test areas

- EC** Engaging customers
- OC** Delivering outcomes for customers
- LR** Securing long-term resilience
- CMI** Targeted controls, markets and innovation

## £150m

we have invested £150m to increase the capacity of Abberton reservoir and we are investing further to improve raw water transfer capability between Abberton and Hanningfield

We will:

- Improve treatment capability at Layer WTW to manage annual fluctuations in water quality that we have experienced since the expansion of Abberton reservoir. This will directly benefit over 100,000 properties. It will also provide a more reliable secondary source of supply to some of the 300,000 properties supplied directly from our other major water treatment plant at Hanningfield;
- Increase the resilience of our raw water transfer capability between Abberton and Hanningfield reservoirs. This will allow us to move raw water across our networks, so that we can fully use the resource capacity of Abberton, and will directly benefit over 400,000 properties. It will enable more effective abstractions and help maintain abstraction licence compliance. It will also allow us to meet demand resulting from forecasted future population growth in North Essex without the need for any additional treatment capacity at our existing sites;
- Provide a secondary point of supply to 130,000 properties currently supplied from a single trunk main at Herongate Service Reservoir, Essex;

## 3.3 Reliable and resilient services continued

### Outcome 7 continued

- Construct new storage capacity and improve the interconnectivity of our North Suffolk network to give 90,000 properties in Great Yarmouth, Lowestoft and North Suffolk an alternative source of supply in the event of a failure or reduced capacity at one of the three major treatment works supplying this area; and
- Improve overall site and system resilience to natural and man-made hazards at 25 of our water sites deemed to be 'too critical to fail'. This will reduce the likelihood of a large loss of supply event, and benefit more than 495,000 properties in total.

### Our performance commitments

#### Interruptions to supply greater than three hours

This is a common measure of how well we maintain uninterrupted water supplies for customers. The measure works by calculating the total duration of all water supply interruptions lasting three hours or more and dividing the total time by the number of properties we supply, giving an average interruption time per property in minutes and seconds.

Our PC levels will tighten progressively over the next five year period to 03:00 by 2024/25. This is 40% tighter than our performance

commitment level of 5:00 for 2019/20. Our PC levels throughout the period 2020-25 are in line with Ofwat's forecast of industry upper quartile performance. These targets are very stretching as we believe from our experience that companies are unlikely to be able to reduce performance far beyond two minutes in the future without compromising the health and safety of crews in responding to mains bursts.

We expect the industry upper quartile and frontier performance levels to converge for this measure by 2024/25. We also expect to make only marginal gains beyond this but we are committed to maintaining upper quartile performance levels as a minimum.

three hours or more. This measure will work in the same way as the common measure, following the same industry reporting methodology. We think this measure is needed to drive the industry forward and a measure of all interruptions >1 hour could be adopted as the new industry common measure in future.

As this is a new measure we do not have sufficient historical data for shorter interruptions from which to derive targets. We are therefore committing to a percentage reduction in performance by 2024/25, in line with Ofwat's guidance for new measures in the PR19 methodology. We will collect data from April 2018 to March 2021 and take a three-year average of performance as our baseline from which we will then aim to improve by 10% by 2024/25. We will follow this will a further 5% improvement by 2030 and by a further 5% by 2035.

We began using this new measure in April 2018 and will report our performance for 2018/19 in our Annual Performance Report. We have ensured that data for interruptions of one to three hours is as robust as data for interruptions of three hours or more by:

- Training all field teams who submit interruptions data to inform them of the new measure being introduced and ensure they understand the importance of accurate data capture;
- Using the same team to validate data for interruptions of one hour or

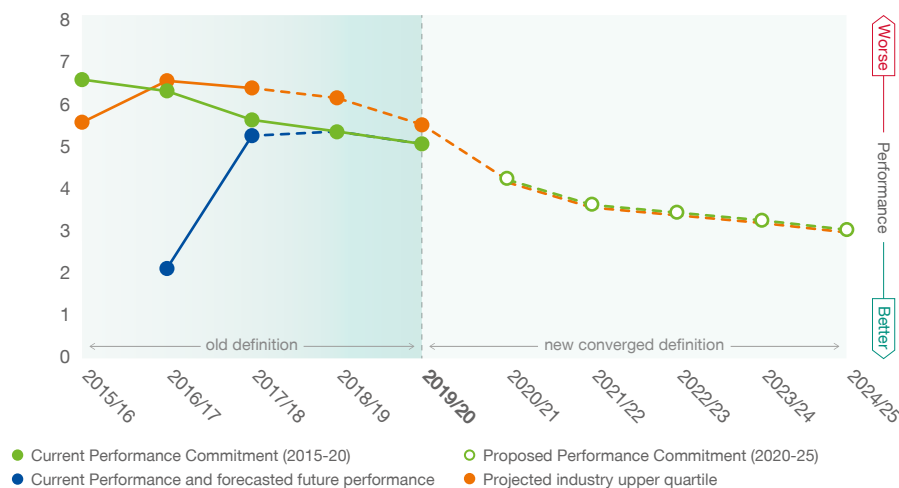
#### Ofwat IAP test areas

- EC Engaging customers
- OC Delivering outcomes for customers
- LR Securing long-term resilience
- CMI Targeted controls, markets and innovation

**We will set very stretching targets for interruptions to supply measures.**

**273** See water supply interruptions, 5 minutes 23 seconds

### WATER SUPPLY INTERRUPTIONS: OVER THREE HOURS Minutes per property



## 3.3 Reliable and resilient services continued

### Outcome 7 continued

more as we do for interruptions of three hours or more - using radial mapping techniques with customer data and flow and pressure data where available to verify the detail of interruption events; and

- Ensuring our data is complete using regular cluster analysis of customer contacts. This involves checking where two or more customer 'no water calls' occur within one hour in the same district metered area - suggesting an interruption of one hour or longer has occurred. If we find evidence of an unreported interruption this will be investigated by analysts.

### Interruptions to supply greater than 12 hours

Our second bespoke measure for interruptions measures the number of properties experiencing an interruption of more than 12 hours. It assesses the resilience of our water supply system covering resource management, the maintenance of our asset base, and our ability to respond to and recover from unforeseen events.

This will also help tackle the huge inconvenience of long interruptions for the small number of customers currently impacted in this way. We have identified this as a measure of asset health.

#### Ofwat IAP test areas

- EC** Engaging customers
- OC** Delivering outcomes for customers
- LR** Securing long-term resilience
- CMI** Targeted controls, markets and innovation

**Performance for interruptions to supply over 12 hours will improve by 17% by 2025.**

We intend to improve our performance for interruptions to supply over 12 hours by 17% by 2025, equating to a PC of 400. This compares favourably to the industry upper quartile level.

### Unplanned outage

This new common measure will be introduced in 2020 as a measure of asset health for water abstraction and water treatment assets. The expectation is that we will maintain enough water production capacity to meet the level of demand we would experience in a peak week (ie a period of high demand). This measure reports the extent to which companies fall below this expectation due to any unplanned

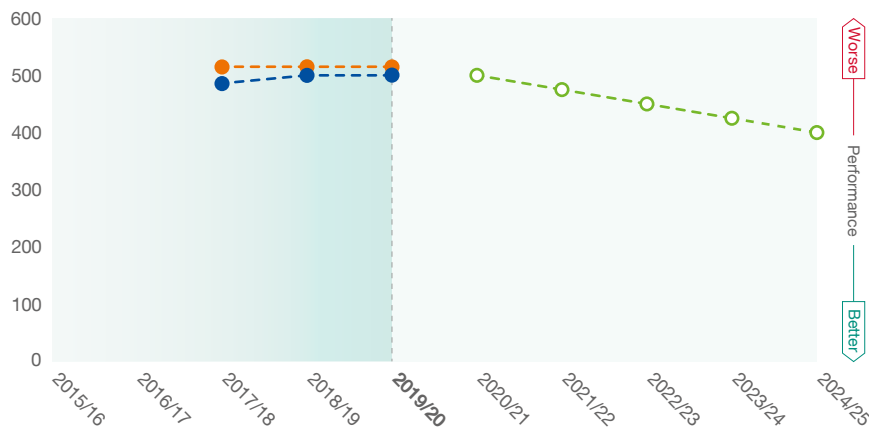
outages resulting from asset failures or the inability to treat water to the required standards.

This measure takes account of the frequency of any outages at WTW, the duration of the outage and the criticality of the assets that are causing the outage. Outages arising from planned works will be recorded separately from outages arising from unplanned causes such as asset failure. Where planned works result from asset failure, any resulting outage will also be recorded as unplanned.

As this is a new measure, we need to build up a full data set to understand how we perform in 2018/19 and 2019/20. Performance in 2019/20 will

### 12 HOURS (OR MORE) INTERRUPTION

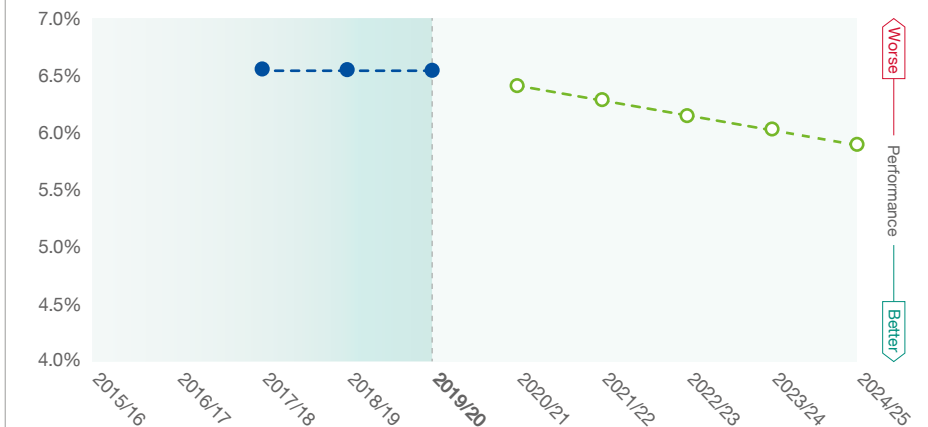
The number of properties that experience an interruption of 12 hours (or more)



● Current Performance and forecasted future performance    ● Proposed Performance Commitment (2020-25)  
 ● Current and forecasted industry upper quartile

### UNPLANNED OUTAGE

Percentage of maximum sustainable production capacity



● Current Performance and forecasted future performance    ● Proposed Performance Commitment (2020-25)



## 3.3 Reliable and resilient services continued

### Outcome 7 continued

be used as the base year and target for 2020/21. We will then deliver a 10% improvement to unplanned outage performance by 2025, and will set our PC levels on this basis.

#### Mains bursts

This common measure is a measure of network asset health. It is calculated by taking the total number of mains repairs completed in that year per 1,000km of water mains. This includes 'reactive bursts' which are visible and occur unexpectedly, along with 'proactive bursts' which are less visible and are identified through leakage detection.

In a significantly stretching target for us, we are committed to achieving forecast industry upper quartile performance by 2025, and will reduce the number of bursts to a PC level of 120.9 in 2024/25. This is approximately 25% lower than our number of bursts in 2018.

By 2030 we aim to reduce bursts by a further 8% and then another 9% by 2035.

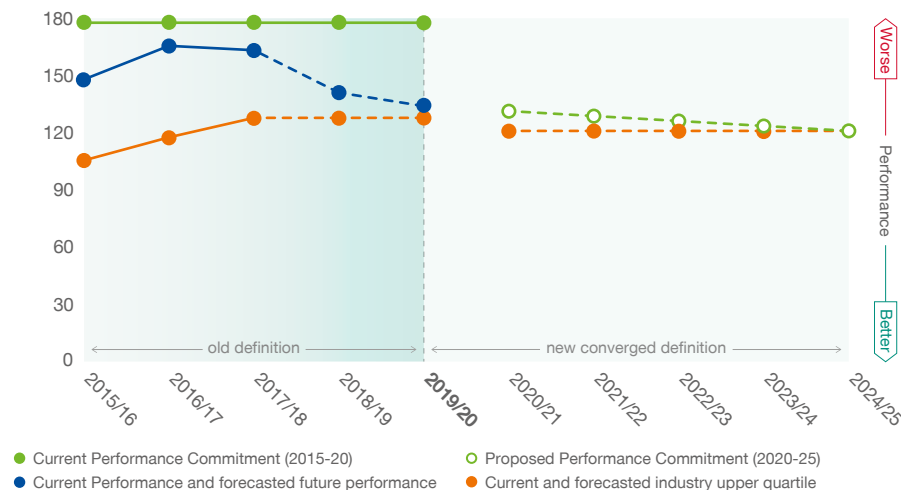
#### Ofwat IAP test areas

- EC** Engaging customers
- OC** Delivering outcomes for customers
- LR** Securing long-term resilience
- CMI** Targeted controls, markets and innovation

**“We are committed to achieving industry upper quartile performance for mains bursts by 2025.”**

#### MAINS BURSTS

Number of bursts per 1,000km of water mains



### Leakage

This is an industry common measure, which is assessed separately in our operating areas. This is because our ESW operating area is classed as a 'water stressed' area and there is a stronger economic driver to reduce leakage in this region.

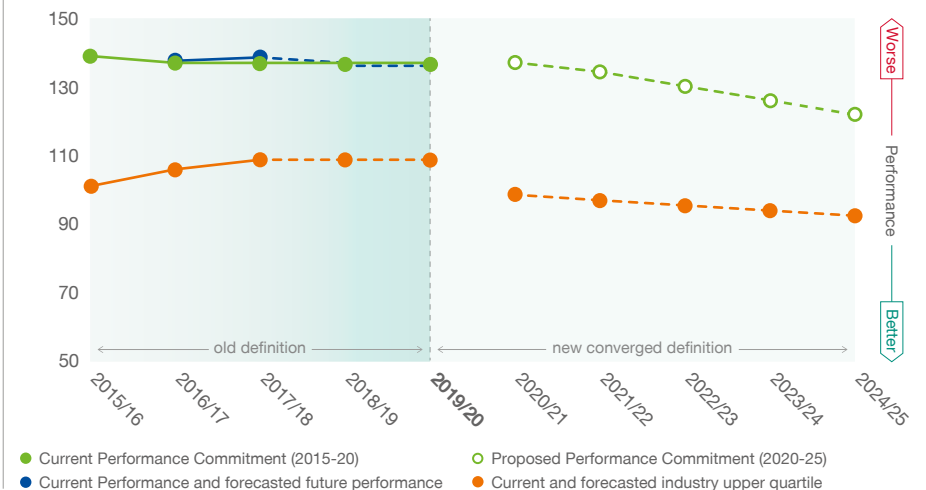
We measure leakage in megalitres of treated water lost each day from our water network and also from customer supply pipes, averaged over a year. From 2020, PC levels will apply to the three-year average of annual performance to allow for variations in weather that can significantly affect leakage levels.

#### Leakage in megalitres (MI/d) per day, annual and three year PC levels

		2020/21 MI/d	2021/22 MI/d	2022/23 MI/d	2023/24 MI/d	2024/25 MI/d
NW	Annual target	134.4	130.2	126.1	121.9	117.7
	3 year PC level	137.1	134.4	130.2	126.1	121.9
ESW	Annual target	60.4	58.2	56.0	53.8	51.6
	3 year PC level	61.9	60.4	58.2	56.0	53.8

#### LEAKAGE - NW

Leakage in megalitres per day (MI/d), three year average



## 3.3 Reliable and resilient services continued

### Outcome 7 continued

By 2025, we will reduce our annual average leakage levels to 15% (NW) and 17.5% (ESW) below 2019/20 PC levels. These equate to annual leakage levels of 117.7 MI/d for NW and 51.6 MI/d for ESW. We will continue to reduce leakage by at least 10% in each five-year period after 2025. This would represent a 46% reduction from current levels by 2045 in ESW and a 44% reduction in NW.

### Visible leak repair time

Our bespoke measure is the time taken to repair visible leaks reported by customers. The speed with which we respond to leaks is key to giving customers confidence that we take leakage seriously and are leading by example in reducing waste.

Visible leak repair time will be measured in terms of the average number of days taken to find and fix all visible leaks reported by customers over the course of a year.

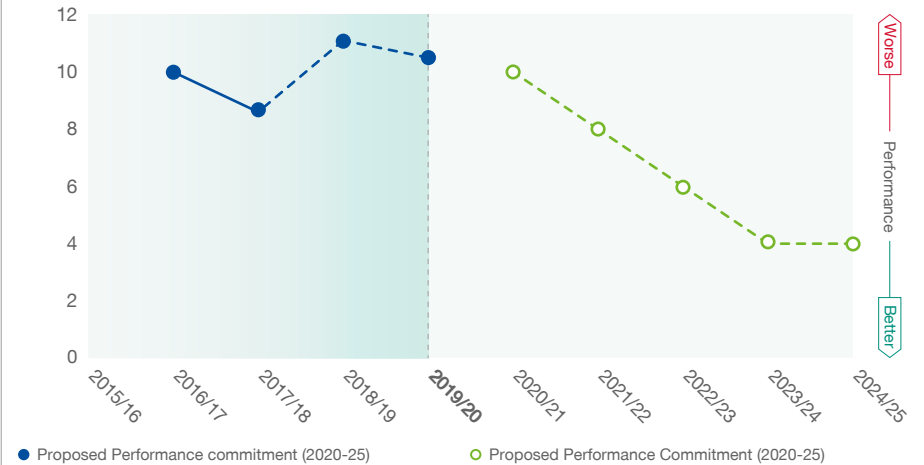
We will deliver a significant improvement in our performance over the period, reducing the average visible leak repair time from ten days in 2016/17 to an average of four days in 2024/25.

#### Ofwat IAP test areas

- EC** Engaging customers
- OC** Delivering outcomes for customers
- LR** Securing long-term resilience
- CMI** Targeted controls, markets and innovation

### VISIBLE LEAK REPAIR TIME

Average number of calendar days that it takes to find and fix visible leaks reported to us by customers



### LEAKAGE – ESW

Leakage in megalitres per day (MI/d), three year average



### Per Capita Consumption (PCC)

This is being introduced as a common measure of performance for 2020-25. It has been subject to extensive convergence work to ensure that all companies will calculate their performance consistently.

As there is still uncertainty about performance levels across the industry we have not yet been able to calculate the upper quartile performance level for this measure.

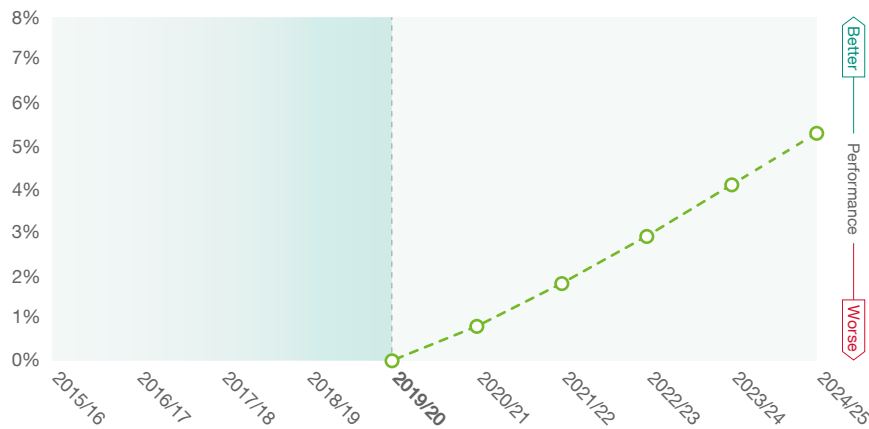
We have an ambitious goal to reduce PCC to 118 litres per person per day by 2040. This is a decade earlier than the recent National Infrastructure Commission (NIC) report recommendation. In the short term we will work to deliver a 5.3% reduction in PCC by 2024/25. As with leakage, our PCC performance will be measured over a three-year rolling average to allow for variations in the weather, which can significantly affect water usage in the home.

## 3.3 Reliable and resilient services continued

### Outcome 7 continued

#### PER CAPITA CONSUMPTION

Cumulative percentage reduction of litres per person per day



○ Proposed Performance Commitment (2020-25)

#### Percentage of the customer population at risk of experiencing severe water supply restrictions in a 1-in-200 year drought

This common measure examines the percentage of the customer population at risk of experiencing severe restrictions such as standpipes or rota cuts as part of Emergency Drought Orders in a 1-in-200 year drought.

An area of population is considered to be 'at risk' if the supply-demand balance calculation in each WRZ (as used for water resource planning) for a 1-in-200 year drought results in a shortfall.

We are currently compliant with this drought measure and are proposing a PC of 0% from 2020.

#### Ofwat IAP test areas

- EC** Engaging customers
- OC** Delivering outcomes for customers
- LR** Securing long-term resilience
- CMI** Targeted controls, markets and innovation

### Outcome 8

## Our drinking water is clean, clear and tastes good.

#### Why this outcome is important

Customers see the provision of high-quality drinking water as essential to our core service offering (Service Measures, 2017).

When our customers turn on the tap, they expect the water to be clear of colour and free of any unpleasant taste or smell (Taste and Odour, 2016 and 2017). Any issue with this may cause them to worry about its wholesomeness. We need to ensure a continuous supply of high-quality water to promote customer confidence and trust.

#### How our customers' views have shaped the plan

Our customers judge water quality through the appearance, taste and smell of the product we deliver to their homes (Discolouration, 2016). Our customers generally have high levels of satisfaction with our service (Domestic Tracking 2017/18), and expect high levels of performance from us.

However, a small minority (particularly in our ESW operating area) are not satisfied, and will drink bottled water, filter their water, or rate it poorly, with only a minority of these reporting any issues to us (Taste and Odour, 2016 and 2017). Through our PCs we are committed to improving our service by improving all of these aspects of water quality.

We know from CCWater research (2016) that nationally around 7 out of 10 customers choose to drink tap water at home.

In 2018 we engaged our customers on schemes to remove lead pipes from the water network. Customers were surprised to learn about the impact of lead and were largely unaware of their ownership and responsibility for maintaining these. Customers expressed their support for enhancements to replace lead pipes in high risk areas, replace lead pipes in buildings that children under six visit regularly, and to replace lead pipes in rural areas supplied from a single source (Discretionary Phase 1 – Lead Supply Pipes, 2016).

## **3.3 Reliable and resilient services** continued

### Outcome 8 continued

#### What our plan will deliver for customers

We aim to provide our customers with drinking water that is consistently clean, clear and tastes good, so that they can feel sure that the water we provide always meets the highest quality standards. This will help towards our ambitious goal to promote confidence in our drinking water so that nine out of ten of our customers choose tap water over bottled water. Choosing tap water provides an affordable option for our customers, and helps reduce the use of single use plastics.

#### Long-term context

Our plans to continuously improve water quality in 2020-25 are part of our Long Term Water Quality Plan which looks ahead 25 years and was submitted to the DWI in May 2018.

**A** See Appendix 2.6

We see excellent water quality as going hand in hand with being more resilient, and ensuring that we invest appropriately in our assets. This means understanding our risks and planning investment with a long-term view.

We have embarked on the process of designing what we want our water supply network to look like in 25 to 30 years from now by completing our first strategic plan for the Tees network in our NW operating area. Our plan considers all known risks from source to tap and how all of the complex issues in this supply area could be addressed holistically. We now have a strategic solution to risks in the Tees network which can be delivered incrementally as part of a long-term plan. This will begin with the replacement of 37km of new large diameter water main in the period 2020-25; a scheme that is supported by the DWI.

During the period 2020-25 we plan to build on this approach and carry strategic reviews of our water networks across all our other areas of supply. These will enable us to develop a complete vision for the future, together with a long-term plan for all of our operating areas.

The long-term plan will include replacing strategic assets such as storage reservoirs in the network, as well as network reconfiguration and rationalisation. This will enable us to deliver a more reliable and resilient water supply, so that customers do not experience changes in the way their water tastes that can undermine their confidence in the water quality. Our plans will also enable us to deliver supplies through a more controlled, calmer network, which in turn reduces the risk of water discolouration.

#### Ofwat IAP test areas

- EC** Engaging customers
- OC** Delivering outcomes for customers
- LR** Securing long-term resilience
- CMI** Targeted controls, markets and innovation

#### Business plan priorities

##### Our source to tap approach

The concept of 'water safety planning', adopted in 2008, introduced the source to tap approach, promoting more holistic management of the entire water supply system. We first adopted the source to tap approach in our 2014 Discolouration Management Strategy. At the time this was an innovative approach for managing discolouration, which moved the focus away from more traditional capital investment/ asset solutions to operational approaches that actively manage our systems and networks.

In 2015, the Water Team was restructured and is now aligned into five areas that correspond to the source to tap journey, from catchment to customer. Source to tap is therefore an evolving approach through which we consider the whole process of supplying our water. Our source to tap success, particularly demonstrated by our performance improvement in reducing discolouration contacts, has been recognised as best practice. We successfully implemented research findings into operational practice and have shared our approach with other water companies to benefit customers beyond our regions.

The following sections reflect the source to tap journey and our overall approach to improving water quality.

##### Step change in our approach to catchment management

Catchment management is the practice of working with farmers and land owners to promote and influence how they manage their land because of the impact this has on sources of 'raw' (untreated) water.

We have been heavily involved in catchment management since 2004, and were one of the first water companies to initiate an agri-advice partnership. The Chelmer and Blackwater Partnership in our ESW operating area is an award-winning example of how successful catchment management can be.

We recognise the importance of catchment management for protecting water resources, its wider benefits and the support for this approach from customers and stakeholders. Our plan for 2020-25 is to build on our excellent partnership foundations and to significantly expand the scale of this activity, including supporting our catchments with increased staff resource.

We will work with the catchment partnerships to address wider water quality issues through delivery of agri-advice, and deliver multiple benefits to the environment through catchment management, linked to our environment ambitions.

**148** See Section 3.5

## **3.3 Reliable and resilient services** continued

### Outcome 8 continued

Our commitment is to double the area of safeguard zones within our operating areas which are supported by agri-advice or local delivery partnerships under the CaBA, from 171,000 ha to over 340,000 ha by 2025. This will help us take a catchment-based integrated approach to delivering water and wastewater services, joining up plans and agreeing shared objectives with partners for better management of all our catchments.

In June 2018, we were delighted to be able to sign the Catchment Management Declaration drawn up by the Cambridge Institute of Sustainability Leadership. This aims to bring sectors and organisations together to enable effective catchment management. The declaration will address six key principles in order to create a step change in catchment management activity to support the ambitions of Defra's 25-year plan. This aligns with our own ambitions for catchment working, and we welcome the support from stakeholders that this declaration and its related activities will bring.

#### Ofwat IAP test areas

- EC Engaging customers
- OC Delivering outcomes for customers
- LR Securing long-term resilience
- CMI Targeted controls, markets and innovation



**We will double the area of safeguard zones within our operating areas supported by agri-advice.**

**340,000ha**

We will double the area of safeguard zones within our operating areas supported by agri-advice from 171,000 ha to 340,000 ha by 2025

In our NW operating area, our approach to catchment management includes working with the Peatland Partnership. Restoring peatland habitats by raising water levels and preventing erosion supports natural flood management, increases carbon storage, and prevents dissolved organic carbon from running into rivers and reservoirs and causing the water to become discoloured.

In 2015-20 our contribution, together with that of other partner organisations, helped secure £10m of funding from Defra and EU Life for this work in the north of England which will continue into the 2020-25 period. The benefits for water treatment are not yet measurable, but the number of multiple benefits delivered and the results of catchment research give us confidence that it is right to maintain our support in this area. We will continue to invest in supporting the work of the Peatland Partnership through our investment in the WINEP.

In some cases, where raw water quality is poor, we also have the option to carry out abstraction management. River water quality in particular can often change, reflecting, for example, recent weather and upstream land management practices. During risk periods, samples are taken frequently, so that we can assess the quality of our raw water.

This information allows us to choose not to abstract poor quality water, if we can source supplies from less-affected locations elsewhere. Abstraction management is not always possible when water resources are constrained, however, and we remain ready to install additional treatment options if required.

In 2020-25 we will continue to improve our abstraction management by working towards full automation of the process. This will begin with developing a wider range of real-time water quality monitoring at our abstraction sites. We are already monitoring some aspects of raw water quality, such as turbidity and colour. For other aspects like pesticide levels we are doing manual sampling which then has to be processed in a lab. If we do identify a change in water quality we then have to respond manually.

We plan to link up a full range of real-time water quality monitoring to our industry-leading Aquadapt (now Aquadvanced Energy) water network management system, which we already use to manage and distribute treated water in the network. This software can automatically control and adjust where we take water from; this means that we can respond to changes in raw water quality quicker to prevent this impacting on our treatment processes and ultimately on the quality of our customers' water supplies.

#### Water treatment

Raw water taken from the environment at the start of our source to tap journey contains colour, bacteria, particles and micro pollutants including pesticides. We treat this water to turn it into clean, clear drinking water that tastes good.

We have identified an area for improvement and in 2020-25 we will invest to reduce turbidity. The particles that create turbidity can shield bacteria, viruses and other pathogens from treatment processes and disinfection. We measure turbidity in raw water and repeatedly through our treatment processes as it is very important to reduce water turbidity levels through the treatment process. We will improve filtration at WTW to reduce turbidity to lower levels and carry out refurbishment and maintenance of pipes and tanks on treatment works to keep them clear of settled particles.

## Outcome 8 continued

### Taking a new approach to delivering catchment management

Having a good working relationship with farmers in our operating areas is vital to protecting water resources from pollutants and providing customers with clean, clear drinking water that tastes good.

Through our catchment management approach, we work closely with farmers and other land managers to influence their decisions and to promote and support best practice to reduce the impacts from agricultural land on water courses. We will continue to take a risk based approach but plan to use innovative technologies such as remote sensing, to help us better understand our catchments and to help target our work to achieve the best value outcomes. A key focus of our work will be to promote the value of soil and the importance of soil health. Soil health is a key factor in multiple diffuse water pollution challenges. Farmers identified through our risk mapping work will be offered specialist soil health visits. Additionally, targeted soil sampling and analysis will be available where appropriate to help them to understand:

- The importance of healthy soils in terms of crop success, yield, and optimizing their use of fertilizers;

- The benefit of good soil health in protecting local watercourses from diffuse pollution;
- The current condition of their soil and the actions they could take to improve it; and
- Methods to reduce sediment and soil loss from land.

We will encourage farmers to use technology to aid precision farming and will look for ways to reduce the barriers preventing the uptake of more advanced farming techniques.

Metaldehyde is a pesticide contained in slug pellets that cannot be removed in our WTWs. Through our AMP5 and AMP6 catchment management approach, we have successfully worked with farmers to manage the application of metaldehyde-based slug pellets to agricultural land and prevent its run-off into water courses. As part of our AMP7 programme for managing metaldehyde risk, we had proposed a “paid for product substitution scheme” whereby in high risk catchments, we would have subsidised an alternative product which would not pose any risk to drinking water. However, a ban on the outdoor use of metaldehyde based slug pellets will be take place from Spring 2020. This means that the paid for product substitution scheme will no longer be required and that metaldehyde concentrations will be significantly reduced. However, we will continue to monitor for it during AMP7 and will provide

targeted advice should elevated concentrations still be found in any of the rivers from which we abstract.

We have confirmed our approach with the DWI. It has confirmed (14 March 2019) that our programme for managing metaldehyde risk in AMP7 is a decision for the company, taking into account the specific local challenges to drinking water quality that need to be managed to deliver and maintain compliance upto and beyond the date of withdrawal of metaldehyde from the market. The Inspectorate expects us to use all available means at our disposal to maintain compliance. The DWI supports the continuation of all catchment management initiatives throughout catchments to reduce risks to drinking water from all emerging risks..

## **3.3 Reliable and resilient services** continued

### Outcome 8 continued

Our treatment processes are normally capable of removing pesticides, but levels can be above treatment design capacity if it rains heavily after pesticides have been applied to land. Some pesticides are less responsive to conventional treatment and novel options are available, but they are between two to six times more expensive than conventional treatment options. We do not plan to resolve the risks by installing expensive assets for occasional issues if there is no risk to health, as we consider this is not cost-effective for our customers. Instead, we will extend our abstraction and catchment management activities in 2020-25 to focus on prevention and protection of water resources.

Where treatment processes are not optimised, this can also present a water quality risk. For 2020-25 we will further enhance our treatment capability by improving 'run to waste' processes at key treatment works so that they can safely discharge water that does not meet water quality standards without harming the environment. This will improve our ability to respond and recover during poor water quality events, reducing the potential for water quality failures and ensuring that our customers experience no deterioration in service.

### Strategic network

We will ensure that the strategic network of larger pipes, storage reservoirs and pumping stations can continue to transport drinking water that is clean, clear and tastes good by investing in maintenance programmes and replacing parts of the strategic network where necessary. We use water quality risk scores as leading indicators of issues within the strategic network to help prioritise maintenance more efficiently.

We have employed an innovative trunk mains conditioning approach developed in conjunction with Sheffield University and Suez Smart Solutions (SSS) that is helping reduce the number of reports of discoloured water from our customers. We have worked with SSS to enhance the capabilities of our Aquadapt control system so that it now enables us to deliver more consistent water quality and reduced discolouration events across our water networks (see overleaf). We are currently managing water quality risks, using automated control across 25% of our northern strategic network. We intend to increase this substantially across our northern strategic network by 2025. This innovative use of the system is helping us to create a more efficient and resilient network.

### Bringing our 'food factory' vision to water treatment

**In order to safeguard the quality of the water we supply, we looked outside the industry to understand how others manage consumable products.**

We visited Greggs and Nestlé, where we identified that the way in which they manage their factory processes was transferable to our WTWs.

We identified a large number of examples of good practice and are now embedding the 'food factory' vision in our water management processes.

The food factory vision uses a range of tools and techniques, including site scorecards which demonstrate to all employees the value that they add and show improvements made in safety, quality, delivery and cost. We also use flash alerts, where we share and resolve concerns or near misses.

In their Chief Inspector's report of January 2017, the DWI commented that they "welcomed a number of points of good practice seen during the audits including NWL's implementation of a 'food factory' culture at its treatment works".

We will continue to embed our food factory vision in everything that we do within our water supply teams, in line with our Long Term Water Quality Plan, to help strengthen our focus on delivering a product that is of the highest quality.

### Ofwat IAP test areas

- EC Engaging customers
- OC Delivering outcomes for customers
- LR Securing long-term resilience
- CMI Targeted controls, markets and innovation



**Currently around 25% of our strategic network is covered by active automated control. We aim to increase this to 90% by 2025.**

### Distribution network

The distribution network consists of smaller pipes, mostly under the road in built up areas, which bring water to customers' homes. A significant proportion of these pipes contain iron, which can enter into treated water, resulting in failures of the iron standard. We manage this partly by reducing water corrosivity at WTWs. We are also expanding our programme of water mains replacement for 2020-25, with a greater focus on removing iron mains from the network; particularly when they are unlined and have shown to be linked to failures of the iron standard at customers' taps.

If the flow in pipes is too low, material can start to build up on the inside wall of pipes or sediments can start to settle. This material can then be disturbed later during burst events or other surges in flow, causing the appearance of water to change as a result of increases in turbidity or discolouration. We have a long standing practice of flushing our mains to keep them clean, which we are enhancing all the time.

## 3.3 Reliable and resilient services continued

### Outcome 8 continued

In recent years we have applied a new approach of 'uni-directional flushing' so that the flush of water is always travelling one way to get a really thorough clean. At present this system is optimised based on customer contacts. As these reduce we will make further process improvements by using water quality samples taken after flushing to help make our programme more efficient and focus on problem areas.

#### Customer connections

The service pipes that connect our mains to customers' taps can have a significant impact on the quality of water that is supplied. However, we are legally responsible for only a short part of the service pipes to customers' properties up to a property boundary. Very small amounts of lead, copper and nickel can be introduced into drinking water from household plumbing.

We have addressed this risk by installing additional water conditioning processes, and optimised the use of phosphate to reduce the risk of lead, copper and nickel entering drinking water from the pipes and fittings in customers' homes. However, we recognise that dosing phosphate during treatment is not a permanent solution to the risks posed by lead pipes.

### Adapting innovations brings even wider benefits

**We use sophisticated software, called Aquadapt, to build resilience and save customers' money by helping us manage our network and water resources more efficiently.**

The software anticipates water demand in real time in each of our supply zones, identifies the cheapest sources of water and most efficient pumping combinations, then automatically controls flows through treatment works, pumping stations and reservoirs.

We were the first water company in Europe to implement this control system (in 2012) and by using it across the business have saved around £1m a year in energy costs.

We have worked with Aquadapt's developers, SSS, to enhance the software further so that we can also use it to automate trunk mains conditioning across our strategic networks in order to further reduce the number of our customers experiencing discoloured water. This enhanced capability allows us to manage the risk of our customers experiencing discoloured water when sudden and unplanned changes in flows occur in our network.

This is the first time Aquadapt has been used in this way anywhere in the world, and means that our network is more resilient and that customers receive less discoloured water than they would have done previously.

#### Ofwat IAP test areas

- EC** Engaging customers
- OC** Delivering outcomes for customers
- LR** Securing long-term resilience
- CMI** Targeted controls, markets and innovation

**“Our plan for 2020-25 takes a long-term view which aligns with an industry wide goal to achieve a lead free water supply by 2050.**

**3,730**  
our 2020-25 Lead Strategy includes the replacement of around 3,730 lead communication and supply pipes

Phosphate is a limited resource and we understand through applying the principles of our Integrated Approach that adding phosphate to drinking water influences the levels of total phosphorus that need to be removed from sewage effluent at our STWs to prevent it harming the environment. We are therefore very careful that the amount we add for treatment is the amount needed and no more. While we will need to continue to rely on phosphate dosing to reduce the risks posed by lead for the foreseeable future, our plan for 2020-25 takes a long-term view which aligns with an industry wide goal to achieve a lead free water supply by 2050. Our Rural Supplies Strategy for our NW operating area sets out a commitment to remove lead at specific locations so that we can stop adding phosphate into the water supply for these areas. This work is to understand the implications of removing phosphate dosing and to inform future strategies.

Our 2020-25 Lead Strategy includes the replacement of around 3,730 lead communication and supply pipes that connect homes to water mains. This investment of £10.3m is classed as an enhancement in our plan and is supported by the DWI.

Our customers expect us to help them understand their responsibilities and the actions they can take to reduce the risk of lead entering their water supply (Lead Supply Pipes, 2016). Through our Lead Advisor, appointed in 2016, we also work with local health and education sectors to reduce lead exposure to groups of customers who need additional help and support. We have identified a number of schools and nurseries that may have lead pipes present, and we will work in partnership to remove lead from these properties. This will include replacing a number of customer owned pipes to make sure that all the lead is removed.

#### Delivering clean, clear drinking water that tastes good

##### Clean drinking water

The DWI introduced a new measure of drinking water quality in 2017 called the Compliance Risk Index (CRI). This uses information from the whole source to tap journey, through WTWs, networks and customer taps, to make an overall assessment of water quality, which is comparable between different asset groups and across water companies.



## **3.3 Reliable and resilient services** continued

### Outcome 8 continued

The CRI is a risk calculation and a perfect score is zero, indicating no failure of any standard within the entire water supply system. Our ambition is to drive towards a zero score. The way we respond to failures is considered in the CRI alongside the type of failure and where in the water supply system any failure occurs. Sample failures that affect larger water supply areas have a higher impact on the CRI score than those from small assets and supply zones. The sum of all failures within a calendar year is the CRI.

In response to the new measure, we have analysed historical performance and identified key risks at each point in the source to tap journey. Two key risks to our CRI score are failures of the water quality standards for turbidity and pesticides at our WTWs. Water quality samples have to meet strict standards that are set by legislation. A sample that does not meet the standard is classed as a failure. Standards are set so that failures will not normally be noticeable to customers and, importantly, are seldom a health risk. Any risk to health depends on the level and type of failure identified.

Our customers can be reassured that all failures are thoroughly investigated to identify what has occurred, why it has happened, and what action is necessary. Our source to tap plans are designed to mitigate and manage these risks through targeted operational and capital expenditure on assets, and investing in our people to develop their water quality competency through regular support and training.

We have taken account of the fact that current drinking water standards are under review, and a revised Drinking Water Directive is expected to come into force in the future which will further tighten a number of water quality standards. Although we are preparing for this, there may be some changes that will require a programme of further asset investment to guarantee compliance in future.

#### Clear drinking water

The appearance of water continues to be an important indicator to customers of the quality of water we deliver (Discolouration, 2016). Short-term discolouration issues are usually caused by material that has built up on the inside surfaces of water pipes breaking away into the water. The material that builds up in pipes is now known to continually regenerate. There is a direct link between this and the quality of raw water abstracted for treatment. We can manage this by better controlling the water we take

into the network through catchment and abstraction management. We use Aquadapt to proactively manage the network to prevent regeneration of material. This is particularly important in reducing discolouration as a result of shocks resulting from an unplanned event such as a burst main.

In addition to CRI, we will also continue to use the number of discoloured water contacts we receive from customers as an indicator of our performance. This will allow our customers and stakeholders to hold us to account for improving drinking water quality performance over the long term.

#### Drinking water that tastes good

One of our ambitious goals is to promote confidence in our drinking water so that nine out of ten of our customers choose tap water over bottled water.

We use chlorine in water treatment as a disinfectant to ensure water remains wholesome through the supply system. However, it has a distinctive taste that some of our customers find objectionable (Taste and Odour, 2016 and 2017), and this is the main taste and smell factor that is, to some extent, within our control.

#### Ofwat IAP test areas

- ▶ **EC** Engaging customers
- ▶ **OC** Delivering outcomes for customers
- ▶ **LR** Securing long-term resilience
- ▶ **CMI** Targeted controls, markets and innovation

### Using technology to improve water quality

**We have been investigating the use of flow cytometry to assess water quality since 2016.**

Flow cytometry is a technique traditionally used within biotechnology and medicine to analyse the characteristics of particles and cells within a fluid.

We now use flow cytometry data to derive a Water Quality Risk Score, which helps us monitor and understand changing risks before receiving the results of traditional culture-based methods. This interpretation of data means we can detect changes in water quality, set new standards and predict issues. Where issues do occur, this method helps us to better understand the problem and prevent it from happening again. It is therefore a more efficient way to protect customers.

We use this information to optimise our water treatment processes and prioritise asset maintenance and we continue to explore other potential applications.

Our work on flow cytometry was selected as a finalist in the 'Most Innovative Use of an Existing Technology' category at the Water Industry Achievement Awards 2018. We are currently working with the UK Standing Committee of Analysts to see if the method could ultimately replace the traditional culture based method.

## **3.3 Reliable and resilient services** continued

### Outcome 8 continued

Chlorine contacts currently make up around 30% of our taste and smell contacts. We are working hard to address this, and will focus on reducing the level of chlorine in treated water. For example, we have already made improvements to the water we supply to reduce the chlorine level where it is safe to do so – this has resulted in a reduction of 30% in chlorine taste and smell contacts between 2016 and 2017. From 2020-25 we will continue this optimisation.

We also understand that when we move water from one area to another for operational reasons, this can negatively impact on the customer experience and lead to taste and smell contacts. Our plans for water conditioning will benefit this area. We will keep water supplies as stable as possible across the network and ensure that water quality will be more consistent overall within the network so that operational changes will be less noticeable.

We will continue to measure the number of complaints we receive about the taste and smell of water each year. The Refill campaign, which encourages customers to choose tap water first wherever possible, may also help provide evidence of customer confidence in the water we supply.

Alongside the Refill initiative we work with sporting clubs to promote drinking tap water as part of a healthy lifestyle; every year 11,000 young people go through our Powered by Water education programmes. We plan to increase this to 16,000 by 2025.

We will continue to raise awareness, trust and confidence in the quality of tap water and its great taste, and of the value for money it represents to our customers. We will also monitor customer preferences in relation to choosing tap water through our own household research, the results of which we publish on an annual basis.

#### Ofwat IAP test areas

- EC Engaging customers
- OC Delivering outcomes for customers
- LR Securing long-term resilience
- CMI Targeted controls, markets and innovation

### Our performance commitments

#### Water quality compliance

The CRI is a common measure for the industry for 2020-25. We have also identified this as a measure of asset health. Our target is to achieve a CRI score of 0, indicating zero failures.

There is considerable volatility in this measure, partly because it is new and partly because a small number of failures can have a significant impact on performance. As a result, we propose a penalty dead band, where the penalty would only be payable if performance deteriorated beyond this level. Our deadband is set at 1.5. For 2030 onwards, we will look to maintain a CRI score of better than industry upper quartile.

## 16k

Every year 11,000 young people go through our Powered by Water education programmes, we plan to increase this to 16,000 by 2025

## 9/10

of our customers will choose tap water over bottled water

# 3.3 Reliable and resilient services continued

## Outcome 8 continued

### Discoloured water contacts

Our bespoke measure for clear drinking water is the number of discoloured water contacts per 10,000 people. We have also identified this as a measure of asset health. We have made great strides to improve our performance in this area in recent years since we introduced our source to tap approach. We propose to build on this to deliver a further 20% improvement in our performance, reducing the number of contacts we receive to 2,000 a year by 2025.

#### Ofwat IAP test areas

- EC** Engaging customers
- OC** Delivering outcomes for customers
- LR** Securing long-term resilience
- CMI** Targeted controls, markets and innovation

**20%**

we will deliver a further 20% improvement on our discoloured water contacts performance, reducing the number of contacts we receive to 2,000 a year by 2025

It is important to note that there is a noticeable difference in performance for companies such as ours that rely on upland water sources, as the presence of peat within catchments significantly influences discolouration. Our target for 2025 equates to a rate of 4.59 per 10,000 customers. Longer term, we aim to reduce discoloured water contacts to 3.89 contacts per 10,000 by 2030 and 3.19 contacts per 10,000 by 2035.

### Taste and smell contacts

Our bespoke measure for drinking water that tastes good is the number of taste and smell contacts. We have also identified this as a measure

of asset health. We will continue to improve satisfaction with the taste and smell of tap water.

For 2020-25, we propose to tighten our current PC levels from 987 contacts in 2019/20, to 957 contacts across 2020-25. This equates to an initial rate of 2.02 per 10,000 people and will keep us close to the frontier, better than the forecast industry upper quartile in 2024/25.

Longer term, we will reduce taste and smell contacts to 1.88 in 2029/30 and 1.63 in 2034/35 per 10,000 customers supplied.

### WATER QUALITY COMPLIANCE CRI Index Score



### DISCOLOURED WATER CONTACTS Number of contacts per 10,000 people served



# 3.3 Reliable and resilient services continued

## Outcome 8 continued

### Event Risk Index (ERI)

The ERI is a new measure of water quality during events that was introduced by the DWI to complement the CRI.

The ERI measure considers the seriousness of water quality events, how well we managed the event and the impact of the event. We will adopt the ERI measure as a bespoke measure from 2020. We have identified this as a measure of asset health, and of our asset and operational resilience. Our PC is to improve from current performance to the assessed upper quartile value by 2024/25.

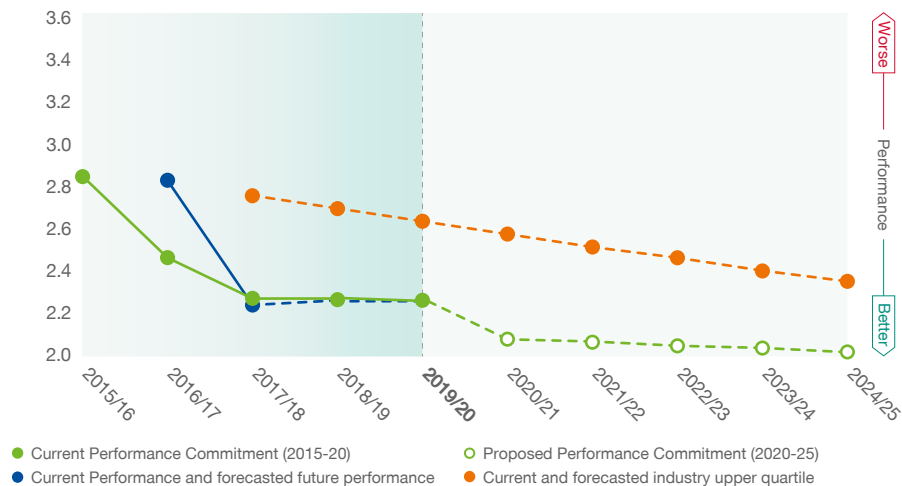
Our continuous improvement plans for 2020-25 will improve the flexibility and resilience of our WTWs and networks and ensure that our drinking water is clean, clear and tastes good.

#### Ofwat IAP test areas

- EC** Engaging customers
- OC** Delivering outcomes for customers
- LR** Securing long-term resilience
- CMI** Targeted controls, markets and innovation

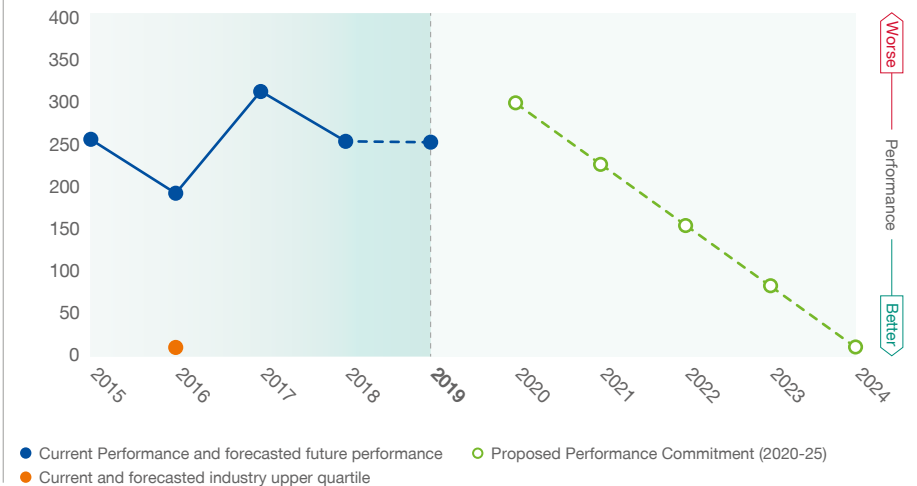
### TASTE AND SMELL CONTACTS

Number of contacts per 10,000 people served



### EVENT RISK INDEX (ERI)

ERI score



## 3.3 Reliable and resilient services continued

### Outcome 9

# Our sewerage service deals with sewage and heavy rainfall effectively.

#### Why this outcome is important

We recognise that sewer flooding is the worst service failure our customers can experience.

Our NW customers expect us to take their wastewater away from their properties and to transport it for treatment, and to do so in a way that has no adverse impacts on the environment. Sometimes factors such as heavy rainfall, blockages, hydraulic incapacity and sewer collapses impact on our ability to do this.

Importantly, customer behaviour can have a significant impact on our ability to provide an effective sewerage service.

#### How our customers' views have shaped the plan

Customers place a higher importance on making improvements to wastewater services compared to water services. When our customers consider the different aspects of their wastewater service (eg different types of flooding, pollution, collapses, blockages and odour from the network) they prioritise a reduction to internal sewer flooding (Service Improvements, 2014).

We have worked with our customers and other stakeholders to develop a range of strategies that will increase the scale and ambition of our approach to preventing sewer flooding (Wastewater Sprint, 2017).

Customers' perceptions of trust and value can be adversely affected if they experience sewer flooding repeatedly (Trust and Value, 2017). For this reason we plan to continue to measure repeat sewer flooding performance.

#### Ofwat IAP test areas

-  Engaging customers
-  Delivering outcomes for customers
-  Securing long-term resilience
-  Targeted controls, markets and innovation



**Customers support us pursuing sustainable approaches to reducing flooding.**

Further research has explored perspectives around partnership working (Flooding Response, 2016), which found that customers expect us to work in partnership in response to flooding events. Our partners also recognise the challenge of fragmented responsibilities for flood management and the different drivers for investment. They have highlighted that they would like to see us working collaboratively to maximise the opportunities presented by areas of overlapping flood risk. We will do this as we understand that taking this approach in response to known flood risk will allow projects to be progressed that are unlikely to have been progressed by an individual flood risk management authority.

Other recent research highlights an expectation among our customers that we should seek to reduce the impact on customer travel journeys by reducing flood risk on major transport routes, and ensuring access to important community and regional infrastructure. This ambition is in line with Defra's Surface Water Management Action Plan (2018).

We believe that customers are largely unaware that rainwater from roads, roofs and paved areas is also mostly treated at our STWs. They see this as wasteful and they support initiatives to reduce the amount of surface water that enters sewers (CSOs, 2016; Flooding Response, 2016). Our customers also expect us to invest in sewer networks to ensure that they have adequate capacity and avoid causing pollution (Resilience, Asset Health and Long-term Affordability, 2018). They are supportive of our use of sewer level monitors and would like us to reduce the frequency with which our combined sewer overflows (CSOs) operate to less than once a month (CSOs, 2016).

Customers support us pursuing sustainable approaches to reducing flooding, as well as traditional storage. They also support us carrying out work to proactively identify areas at risk of flooding, alongside responding to customers who have previously experienced flooding. This is reflected in our proactive flood risk reduction plans.

#### What our plan will deliver for customers

##### Long-term context

Through the 21st Century Drainage Programme, there is a requirement for water companies to develop Drainage and Wastewater Management Plans (DWMPs) to demonstrate a long-term, integrated approach to the planning of resilient wastewater services.

## **3.3 Reliable and resilient services** continued

### Outcome 9 continued

This initiative builds on the principles of the well-established Drainage Strategy Framework and encompasses a range of new standard tools and metrics, such as the 21st Century Drainage Capacity Assessment Framework and Ofwat's resilience measure.

We are fully supportive of the development of DWMPs and are confident that our industry-leading partnership approach to integrated drainage gives us a solid management and governance structure for DWMPs. To illustrate this, the NIDP has been put forward as an exemplar case study for the development of DWMPs.

We understand and support the benefits that come from long-term, catchment-based drainage and wastewater management. In the current 2015-20 period we have already been working to build on our existing approach in this area. This has included, in particular, our preparations for producing DWMPs, along with our trials of elements of the DWMP framework.

We will launch our DWMP Implementation Group (which will include our partners, including those on our framework) during 2018, so that we are fully prepared to publish our company-wide DWMP by December 2022. This will enable us to include the necessary investment at the next price review (PR24).

To determine the DWMP requirements for this plan we identified what we felt were the key emerging themes; this highlighted that water and sewerage companies need to assess what DWMPs mean to them and to prepare individual roadmaps towards the production of DWMPs. Having undertaken these activities ourselves we also carried out a detailed gap analysis of our current approaches.

The approach we will take following this review is to plan our drainage and wastewater infrastructure for at least the next 25 years, recognising the longevity of drainage assets over the next 100 years and more.

We will initially develop detailed DWMPs for all high risk or vulnerable catchments, then develop solutions in collaboration with our partners. We are committed to developing DWMPs that cover all of our drainage catchments, including those that are at low risk, early in 2025-30. We will carry out annual reviews of all catchments to highlight changes that require further, more detailed investigations.

**A** More detailed information can be found in our DWMP Implementation Plan, included at Appendix 3.7

#### Ofwat IAP test areas

- EC** Engaging customers
- OC** Delivering outcomes for customers
- LR** Securing long-term resilience
- CMI** Targeted controls, markets and innovation

**7,000**

reduce the risk of internal flooding at over 7,000 properties by 2020

**60%**

repeat sewer flooding delivered a 60% reduction between 2015 and 2017

#### Business plan priorities

##### Sewer flooding

Sewer flooding can be internal, when wastewater from a public sewer enters an occupied building or passes below a suspended floor, or external, where flooding from the sewer occurs outside of a building, affecting land including yards and gardens as well as external buildings.

We have improved our internal and external sewer flooding performance year on year since 2012/13, through a number of activities across our sewerage services. These include Sewer Flooding LITE (Leading Improvements Through Employees), and proactive work to target blockages and flooding. These activities will reduce the risk of flooding at over 7,000 properties by 2020, and provide the basis for our ambitious goal to eradicate sewer flooding in the home as a result of our assets and operations.

For 2020-25, we have set challenging targets to reduce the amount of sewer flooding our customers experience to help us move towards achieving our ambitious goal. We recognise the importance of addressing sewer flooding to our customers, particularly when it is experienced at the same property more than once. We want to make sure that we focus on customers who experience internal flooding, and those affected who have experienced internal flooding in the preceding five years.

We will also take further action to reduce external sewer flooding, including under severe weather conditions and particularly where it affects customers who need additional help and support.

Our performance for reducing repeat sewer flooding is strong, as we have already delivered a 60% reduction between 2015 and 2017. However, we currently measure repeat flooding using an industry reporting definition that is extremely complex, and therefore difficult for our customers and stakeholders to understand. We will simplify this for 2020-25.

Our new ways of measuring flood risk will provide a measure of flood resilience and the assessment of future risk from a changing environment. They will therefore help reduce the risk of sewer flooding before there is an impact on our customers or on the environment.

To achieve our aims, we will be innovative, co-creating new opportunities for more efficient and effective projects and initiatives. This will include catchment solutions, such as Natural Flood Management Approaches.

**148** See Section 3.5

## 3.3 Reliable and resilient services continued

### Outcome 9 continued

The following sections illustrate our planned activities for 2020-25.

#### Partnership working

We will apply our Integrated Approach to flood risk management. We will build on our industry-leading partnership approaches, including Rainwise and the award-winning NIDP to manage flood risk in partnership. Our ambition for brilliant partnership working is already demonstrated by the NIDP, but we plan to expand this further, delivering even more benefits for flood risk partners and the environment.

We will also liaise with our key flood risk management partners to develop a multi-agency response to flood events, addressing the fragmented nature of water management at the local level. Working closely with our partners will ensure that we provide the best solutions for our customers to help address flood risk from all sources.

#### Ofwat IAP test areas

-  Engaging customers
-  Delivering outcomes for customers
-  Securing long-term resilience
-  Targeted controls, markets and innovation

### Working with communities to reduce flood risk

**Managing surface water before it enters the sewer network is one of the key ways that we can help reduce sewer flood risk and free up capacity in our drainage network.**

Through our Rainwise initiative, we are working together with our customers and our partners to increase the resilience of communities to flooding, and reduce the risk of flooding in future.

We investigate flood risk reduction opportunities and implement solutions, using sustainable drainage systems (SuDS) wherever possible. SuDS include ponds and grassed areas that store surface water temporarily and have wider environmental and societal benefits. These include providing habitats for wildlife, green spaces for people, and improved quality of surface water entering watercourses.

Through Rainwise, we involve residents during our planning stages to co-create more innovative solutions, including through the use of our community engagement vehicle 'Flo', and our online Community Portal.

In 2017, we directly engaged with 400 customers across 17 different communities and our Community Portal received nearly 10,000 returning visitors.

Rainwise helps build awareness of surface water management and the simple steps customers can take to manage rainfall around their homes and in their community, such as the installation of water butts, planters and rain gardens.

It also incorporates our SuDS for Schools programme, which has reached more than 1,000 children aged 4-11 since 2014. It provides education about flooding and habitat creation, as well as showing how water management can be incorporated into home life.

Rainwise has shown that joining forces with other agencies to tackle flooding can help deliver multiple social, economic and environmental benefits, including unlocking investment for projects that might not otherwise be feasible. The initiative won a Judge's Commendation by the British Quality Foundation for Innovation in Sustainability and Society in March 2018.

Since 2015, Rainwise has contributed to reducing flood risk to more than 4,000 properties, and we forecast that we will exceed our target of protecting 7,200 properties through this approach by 2020.

**4,000**

since 2015, Rainwise has contributed to reducing flood risk to more than 4,000 properties

#### Increasing customer understanding

Customer behaviour has a significant impact on the operation of our sewer network. Recognising this, we will increase the scale of our customer behaviour change campaigns, Love Your Drain and Rainwise, to reduce sewer misuse and raise awareness of what customers can do to reduce the risk of uncontrolled discharges.

 See Section 3.6

We believe that to deliver a substantial change in our sewer flooding performance, we need to extend our activities beyond simply increasing and integrating our existing campaigns. For this reason we will seek to shape customer behaviour further by implementing an incentive scheme to encourage responsible behaviour in relation to sewer use.

We will also implement a cost-recovery scheme for those customers who persistently misuse the sewer network. We have carried out research with our customers regarding this proposal, and our plans reflect our customers' priorities and concerns (Behaviour Change and Funds, 2017). We will clearly communicate the conditions of the scheme to all customers, and align this scheme with customer education, so that our customers are aware of the impact of their activities on the sewer and of the cost-recovery action we would begin.

## **3.3 Reliable and resilient services** continued

### Outcome 9 continued

As a last resort, in the case of customers who have persistently carried out actions that have a detrimental impact on the sewer network (leading for example to an accumulation of wet wipes, sanitary products or fats, oils and grease), we will recover the costs of remediation for blocked sewers.

Responding to feedback from our customers (Behaviour Change and Funds, 2017), we will only undertake this action following multiple warnings; we will also consider the customer's ability to pay. We will make sure that we only recover costs from the customer or customers who are responsible for the issue, and only where the blockage involves significant additional costs or impacts for us and our customers. We plan to co-create and validate any scheme with our customers before we introduce it.

At a national level, we will also continue to work with the industry, government and manufacturers to further reduce sewer misuse through our part in the 21st Century Drainage programme and the Sewer Network Abuse Prevention group.

#### Using real time data

One of the ways in which we can reduce the occurrence of sewer flooding is by improving our understanding of the sewer network. We plan to carry out more monitoring, turning the data that we get into information using our internally designed programmes such as Sniper and TriM and Trend, moving towards real time data control. We will also update our drainage area studies to provide a future picture of risk and to make sure that our decisions are based on the best data available.

These activities will link to our Digital Strategy and will be complemented by our network resilience wastewater enhancement.

#### Customer service during and after an event

We will align improvements in our performance for internal and external sewer flooding with an unrivalled customer response when sewer flooding incidents do occur.

#### Ofwat IAP test areas

- EC Engaging customers
- OC Delivering outcomes for customers
- LR Securing long-term resilience
- CMI Targeted controls, markets and innovation

Our plans include:

- Reducing response times (from four hours to two hours in response to internal sewer flooding and from a same-day response to four hours for external sewer flooding);
- Prioritising high risk sewer flooding contacts and customers who need additional support; and
- Making sure that our Technical Support Advisors attend all internal and external sewer flooding contacts.

To reduce the impact of a flooding event on our communities, we will target priority community infrastructure (such as access to and from public transport routes). We will also make it easier for our customers to provide us with essential information (including evidence of flooding and pollution) through social media channels and mobile devices they already use, allowing us to respond more efficiently and effectively.

#### Sewer collapses

Sewer collapses are structural failures on the sewer, and are defined as when an impact on customers or the environment occurs as a result of a failure. While customers may have little direct interest in the number of collapses, the potential consequences in terms of pollution and sewer flooding are high (Service Valuation, 2017; Service Measures, 2017).

To improve our performance in this area, we will continue our programme of sewer surveying. We will also continue to maintain and rehabilitate our sewer network in order to reduce the number of customers who experience a loss of service following the collapse of a sewer.

The way in which sewer collapses are reported has changed following the process that has been taking place to align approaches across the sector. We will improve our reporting to reflect the new approach, including developing a programme of training, and reviewing our processes to allow us to target our investigations efficiently and effectively.

#### Sewer blockages

Blockages on the sewer network are important as a cause of sewer flooding and other uncontrolled discharges. Customers are interested in the impacts of sewer misuse. To meet their expectations we need to drive the industry to reduce the number of blockages that occur.





## 3.3 Reliable and resilient services

continued

### Outcome 9 continued

Our Love Your Drain initiative, described in Outcome 2, aims to influence customer behaviour to reduce sewer blockages. We proactively target CCTV, cleansing and root cutting activities on the sewer network to 'hotspot' areas that are known to be particularly at risk of blockages and flooding. These activities mean we already perform well in this area, but we plan to reduce blockages further. Our customers will play an important role in helping us to do this.

Our approach will include initiatives that will help us identify and address blockages on the sewer network. We will carry out analysis of historical data to allow us to create hotspot mapping of high risk areas, which will allow us to target our activities. We will continue to carry out proactive CCTV surveys of the network and to carry out preventative maintenance to reduce the risk of loss of service due to sewer blockages, and sewer collapses, using tools such as our blockage dashboard. This allows us to visually display the location of blockages across our network, and through this target detailed investigation and customer behaviour change activities.

#### Ofwat IAP test areas



Engaging customers



Delivering outcomes for customers



Securing long-term resilience



Targeted controls, markets and innovation



**We will invest £198m to deliver our wastewater resilience plan for our NW operating area.**

### Regional partnership working to tackle flooding

**The Northumbria Integrated Drainage Partnership (NIDP) is an innovative approach developed from the Tyneside Sustainable Sewerage Study. It brings 13 Lead Local Flood Authorities across the North East together with the EA and NWL to reduce flood risk and promote sustainable drainage.**

NIDP partners work together to prioritise and jointly fund integrated flood risk studies and joint delivery schemes to tackle flooding from sewers, rivers and surface water affecting communities across the North East.

Since 2012, over 20 drainage areas have been studied, leading to delivery of more than 10 schemes, including the multi-award-winning Tyneside projects at Brunton Park, Monkton and Fellgate. Partners have already jointly invested over £9m to reduce flood risk to around 1,000 homes, with more projects currently in construction or in the planning and design stages.

By managing risk from all sources and across all partners, the NIDP approach can deliver far greater benefits than simply flood reduction – habitat creation and water quality improvements are regular additional aspects to the schemes delivered to date. One of the advantages of the NIDP is that projects that are not viable as single-stakeholder projects can be developed jointly by partners to reduce flood risk for customers. This can also allow partners to make substantial cost savings which can be invested to

reduce flood risk elsewhere. For example the Killingworth and Longbenton scheme is estimated to have saved in excess of £10m compared to a 'traditional' underground storage and sewer upsizing scheme.

Through the NIDP, partners are also challenging national processes to enable partnership working to be more easily undertaken and to be rolled out nationally to address flood risk and deliver multiple environmental benefits.

The approach is also being promoted by the DWMP development team under the 21st Century Drainage programme to ensure that future drainage and waste water management planning places integrated flood risk at its core.

In 2017, NIDP partners supported the creation of an Integrated Flood Partnership Coordinator role, funded by NWL and the Regional Flood and Coastal Committee to drive this process forward. The NIDP has now developed an ambitious 10 year programme, which will undertake integrated studies in over 60 more drainage areas across the region between 2018 and 2028.

The NIDP has been recognised nationally as an exemplar of partnership working, shortlisted at the Water Industry Awards 2018 and winning the Project Excellence Partnership Award at the 2018 Flood and Coast Conference.

### Building resilience

In 2020-25 we will invest £88m to deliver our wastewater resilience plan for our NW operating area. Our two enhanced wastewater resilience schemes are outlined below, along with our proposal to reduce flooding risk for properties in the future, where we plan to invest £86m. Further details of our investment for wastewater resilience can be found in the supporting business cases.

**A** See Appendix 3.2

### Network resilience

Our plan is to identify targeted areas for network resilience above and beyond our current levels of service, including assessing and responding to the risk of flooding from all sources in partnership with other Risk Management Authorities.

Network resilience will include innovative monitors to identify and monitor change, and be able to respond to catchment risks, for example extreme weather and urban creep, as well as the building and enhancing of hydraulic models to confirm and refine the risk to our customers from a 1 in 50 year storm (common resilience measure). We will then use these tools and the improved knowledge of how our network responds to these challenges within strategic partnership studies, and to implement schemes to reduce catchment risk, which where appropriate will be co-created with other risk management authorities.

## 3.3 Reliable and resilient services continued

### Outcome 9 continued

Increased visibility of the network, and robust data, will help our decision making and will underpin future strategic asset investment plans. This holistic catchment approach and co-creation of schemes will ensure that we provide our customers with best value and benefit.

The Tyneside network was chosen as a pilot in light of its complexity, size and existing infrastructure. Future plans will look at rolling out the technology in other operating areas.

#### Assets ‘too critical to fail’

We will improve overall site and system resilience to natural and man-made hazards at a number of our assets that have been identified as being ‘too critical to fail’. This includes the risk of flooding from surface, river and coastal waters. Schemes will deliver a range of solutions to reduce the risk of site failure as far as practicable.

The investments we make will improve the reliability, resistance and redundancy capability of our assets to hazards, in addition to improving our assets’ ability to respond and recover from such events. This investment will provide a better service and mitigate the risk of interruption of our services to customers.

Howdon STW, which is located on the north bank of the River Tyne and is the largest wastewater treatment facility on the east coast between Edinburgh and Humberside, has been assessed as ‘too critical to fail’. It serves the Tyneside conurbation with a population equivalent of just under one million.

#### Ofwat IAP test areas

- EC** Engaging customers
- OC** Delivering outcomes for customers
- LR** Securing long-term resilience
- CMI** Targeted controls, markets and innovation

**£107m**

in 2015-20, we will invest a total of c£107m to expand the treatment facility at Howdon

**“NIDP has given us a strong unified voice in our communities and a coherent mechanism for implementing infrastructure improvements.”**

Aaron McNeill  
Northumberland  
County FCERM  
Manager and NIDP  
member

The facility is nearing capacity as a result of population growth and climate change impacts and therefore presents a risk of regulatory compliance failure and associated environmental effects. Howdon STW plays a crucial role in enabling economic and population growth in the North East and limitations to its treatment capacity could impact the long-term economic and commercial development of Tyneside and therefore of the wider region.

In 2015-20, we will invest a total of c£107m to expand the treatment facility at Howdon to address these risks: c£91m to accommodate future growth across the Howdon catchment; c£15m to improve the overall resilience of the STW; and c£1m as maintenance expenditure.

The supporting business case provides further details on the business drivers and outputs required to deliver this enhanced investment scheme.

**A** See Appendix 3.2

#### Reduce flooding risk for properties in the future

We will apply a co-ordinated approach to flood risk in order to deliver a pre-emptive management of flood risk overall. This requires a high degree of partnership with customers, developers, Local Lead Flood Authorities, Local Planning Authorities and the EA.

Through AMP6, NWL has piloted an innovative approach through a programme of small scale studies called the Community Action Plans (CAPs) which have identified areas which are at risk of flooding but have not experienced flooding yet. Modelling the implemented solutions have resulted in positively affecting the properties at risk by reducing their risk exposure. We propose to build on this approach to increase the number of the properties receiving a proactive flood risk reduction and offer a step change safeguarding against future flood risk which is line with the resilience principles.

**148** See Section 3.5

# 3.3 Reliable and resilient services continued

## Outcome 9 continued

### Our performance commitments

#### Internal sewer flooding

This common measure records the number of incidents of properties suffering internal flooding. This includes severe weather events. The PR19 methodology sets a firm expectation that companies will aim for a forecast of the industry upper quartile in each year of the 2020-25 period.

We have used the industry upper quartile position provided by Ofwat to set our PC.

This results in an extremely challenging PC of 177 incidents a year, requiring us to reduce sewer flooding incidents by more than 65% by 2025.

#### Ofwat IAP test areas

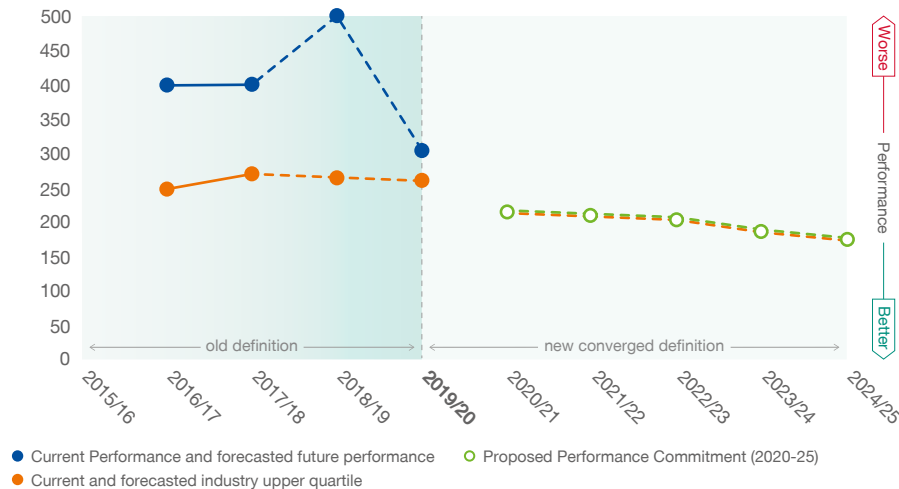
- EC** Engaging customers
- OC** Delivering outcomes for customers
- LR** Securing long-term resilience
- CMI** Targeted controls, markets and innovation

**65%**

we will reduce internal sewer flooding incidents by more than 65% by 2025

#### INTERNAL SEWER FLOODING

The number of internal flooding incidents per year



#### External sewer flooding

Our bespoke measure for external sewer flooding will be the number of incidents of properties experiencing external flooding. This includes severe weather events.

Despite recent reductions, our external flooding numbers remain higher than the industry average. We are setting our PC for this measure to achieve a 35% reduction by the end of AMP7.

This represents stretching improvement and ensures that the balance is right between improvements in internal and external flooding. While we can make improvements to external flooding, we recognise that internal flooding is more important to customers.

#### EXTERNAL SEWER FLOODING

The number of external flooding incidents



# 3.3 Reliable and resilient services continued

## Outcome 9 continued

### Repeat sewer flooding

Our bespoke measure for repeat sewer flooding will record the number of times a year that properties have suffered from internal flooding where the property has flooded internally at least once in the last five years. This includes severe weather events. We have also identified this as a measure of asset health.

We are setting our PC for 2025 at 37. This represents a further 35% reduction on our 2017/18 performance.

This is not a comparable industry measure, so no upper quartile information is available.

Our forecast PCs see a continued improvement in our repeat sewer flooding performance, with 30 incidents in 2030 and 25 incidents in 2035.

#### Ofwat IAP test areas

- EC** Engaging customers
- OC** Delivering outcomes for customers
- LR** Securing long-term resilience
- CMI** Targeted controls, markets and innovation

**35%**

we will deliver a further 35% reduction in repeat sewer flooding by 2025

### Sewer collapses

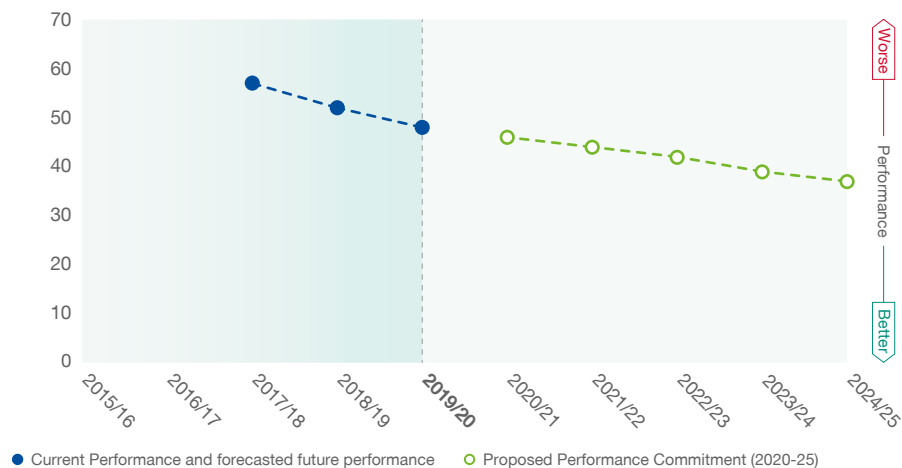
This common measure records the number of sewer collapses that have occurred in the year for each 1,000km of sewer network. It is a measure of asset health.

As this is a new measure following the industry convergence work, we do not have historical data and both historical and future performance for other water and sewerage companies is also currently unknown. Historical comparisons between companies will not be valid although it will be possible to compare future year on year trends between companies.

In 2018/19, we recorded 11.95 collapses per 1,000km of sewer. We plan to reduce this to 8.13 collapses per 1,000km of sewer by 2024/25.

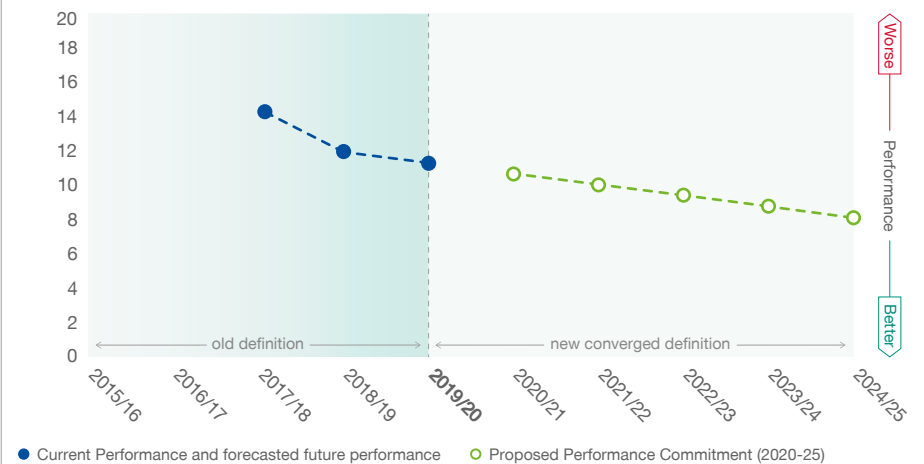
#### REPEAT SEWER FLOODING

Number of times per year that properties have suffered from internal flooding where the property has flooded internally at least once in the last five years



#### SEWER COLLAPSES

Number of collapses per 1,000km of sewer network



## 3.3 Reliable and resilient services continued

### Outcome 9 continued

#### Sewer blockages

This bespoke measure records the number of sewer blockages on the sewer network. We have also identified this as a measure of asset health. We plan to deliver a further 11% reduction in blockages to 10,600 by 2025, which will place us ahead of the industry upper quartile.

Looking beyond 2020-25, our forecast performance commitments see a continued improvement in our blockage performance to 9,000 incidents in 2030 and 8,000 in 2035.

#### Percentage of population at risk of flooding in a 1 in 50 year storm

This new common resilience measure looks at the potential for sewers to flood due to extreme rainfall. It does not mean that sewers will flood or that properties will actually be impacted should an extreme rainfall event occur.

#### Ofwat IAP test areas

- EC** Engaging customers
- OC** Delivering outcomes for customers
- LR** Securing long-term resilience
- CMI** Targeted controls, markets and innovation

The baseline population at risk of sewer flooding in a 1 in 50 year rainfall event within our region is approximately 35.17%. We are proposing a PC that will reduce from the current level to 22.0% by 2025. The proposed PC acknowledges that there is a requirement to improve data sets, but also to demonstrate a significantly improving trend over the next five year period.

#### Reduce flooding risk for properties in the future

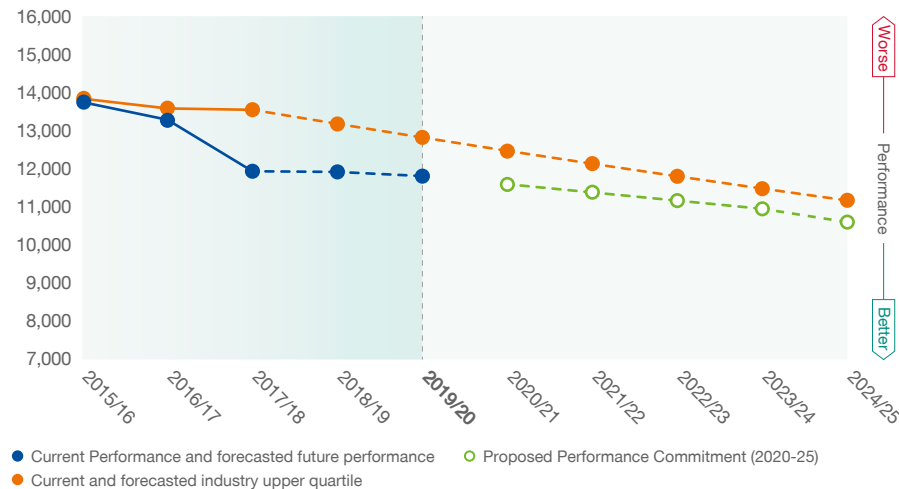
This resilience measure will reduce future flood risk to properties by implementing flood risk reduction schemes in areas that have not yet experienced flooding but may in the future flood if we did not undertake pre-emptive measures to address future catchment challenges and unplanned events. Our ambition is to deliver future flood risk reduction at 7,400 properties over the 2020-25 period. The resilience measure will offer a range measureable flood risk reduction across our region and will work with other risk management authorities to identify catchment wide opportunities where they are in the best interest for our customers.

**11%**

we will deliver a further 11% reduction in blockages to 10,600 by 2025, placing us ahead of the industry upper quartile

#### SEWER BLOCKAGES

Number of blockages



**7,400**

we will reduce the flooding risk for properties in the future at 7,400 properties over the 2020-25 period



# Leading in innovation

“ Many of our members, and indeed some of NWL’s customers, experienced first-hand the exciting annual Innovation Festival events, started in July 2017. We believe that this industry-leading approach to innovation reflects customer feedback really well – they expect the company to continually improve, to use new ideas and to invest in new technology.

Although customers do not have strong views about specific ways of doing this, they expect NWL to ‘move with the times’ and they relish the opportunities to co-create solutions with the company. We welcome this approach and encourage the company to provide many more opportunities in the coming months and years. ”

**The Water Forums**

## We innovate openly and share the benefits

“ Our open innovation ecosystem is a constant source of new ideas that improve the way water is managed. ”

Dr Sarah Cotterill has seen first-hand the exciting potential of our regional businesses to bring about ambitious improvements to the way we manage water and the environment.

In her roles at The Water Hub and our Living Lab she helps to harness the talent and technologies of SMEs to solve real challenges that face us all, in areas such as water efficiency, water cleaning and flooding. Within these open innovation ecosystems she helps us to grow new ideas, test products and come up with creative solutions while providing commercial opportunities for local companies.



Click here to view Sarah’s story, or scan the page in your Zappor app.



# 3.4

## Leading in innovation



Our leading in innovation theme has one outcome:

- We are an innovative and efficient company.

Our ambitious goal for leading in innovation is to:

- Be leading in innovation within the water sector and beyond.

### Ofwat IAP test areas

- EC** Engaging customers
- OC** Delivering outcomes for customers
- CMI** Targeted controls, markets and innovation

## Theme overview

**Super-charging our innovation culture is essential if we are to continue to deliver unrivalled experiences within the context of rising customer expectations, technological advances and changing political and physical climates.**

Through innovation we have adopted ideas that have made a real difference to our business and to our customers' lives. These include our leading approach to bioresources, our community portal, our use of design sprints and data science hackathons to solve complex problems, and our Innovation Festivals.

We have an unceasing desire to find new ways to improve what we do, illustrated by our digital transformation and the growth of our innovation ecosystem, which have recently further boosted our rate of innovation. We understand the key ingredients of innovation – a clear mission, an open culture, partnership working and diversity in all of its forms – so we believe we are well positioned to lead the sector in innovation.

Our whole society will benefit if we can demonstrate to other sectors that open innovation, collaboration and co-creation are the new and right ways to do business.

The innovations in this area that will deliver the difference for our customers are:

- Our Innovation Panel, which brings together experts from global customer service leaders including Apple, Amazon and IBM to challenge us to get the most from innovation;
- Annual Innovation Festivals engaging over 2,500 people and 500 businesses to push through innovative ideas at scale and speed and promote innovation within our regions, the sector and beyond;
- A Marketplace for Innovation to lead the sector in developing innovative solutions and provide opportunities for promotion, sharing and testing of new ideas;
- Use of digital twins, which are replicas of our physical assets, systems and processes that provide the best environment for us and our partners to experiment and run large-scale simulations using cloud computing power; and
- Gaining unique insights as the only water company sitting on the CBI's Innovation Council.

## **3.4 Leading in innovation** continued

### Outcome 10

# We are an innovative and efficient company.

### Why this outcome is important

Innovation is a crucial part of how we deliver an unrivalled, inclusive and affordable customer experience and provide water and wastewater services that are reliable and resilient.

Innovation helps us to solve complex problems, particularly with regards to:

- Recognising and responding to customers' changing expectations;
- Increasing the resilience of our services and our business;
- Driving efficiencies that make customers' bills affordable; and
- Enhancing the beneficial impact we have on the environment and improving our natural capital.

Our ambitious plan for 2020-25 focuses on finding innovative ways to deliver what matters most to our customers, to the environment and to the communities in which we operate and live.

### How our customers' views have shaped the plan

Our customers expect the quality of the services they receive to continually improve (ICS, Annual Reports). They do not have specific views on how we should innovate, but they expect us to be forward looking and to 'move with the times' (Outcomes Review Phase 1, 2017).

Our customers also expect innovation to deliver better value for money and less waste; they expect us to be able to measure how good we are at innovation and the impact it is having (Outcomes Review Phase 1, 2017). As part of our openness we will publish information on our innovations and will track the changes in our performance that arise from the new activities we carry out.

#### Ofwat IAP test areas

- EC** Engaging customers
- OC** Delivering outcomes for customers
- CMI** Targeted controls, markets and innovation



**It is our ambition to be leading in innovation both within and beyond the sector.**

### What our plan will deliver for customers

Our approach to innovation will underpin everything that we deliver in our plan. We will make the most of our established innovation culture to continue to deliver efficient services and creative solutions.

It is our ambition to be leading in innovation both within and beyond the sector. Our innovation approach comprises four elements:

- Culture of innovation. It is everyone's job – we do not have a specific department for it;
- Innovation ecosystem. We have already established partnerships with hundreds of organisations big and small, domestic and international;
- Digital innovation – we aim to be the most digital water company in the world; and
- Innovation operating model – our use of design thinking and the capabilities to speed up the process of turning ideas into value.

Our track record in these areas is illustrated in 'Our Innovation Journey' (see Figure 7), and are underpinned by our forthcoming innovation strategy which we are currently updating and plan to issue in 2019.

### A culture of innovation

Our culture of innovation is brought to life by our people, who are collaborative and always open to new ideas and challenges. This starts with an assumption from every employee and partner that we are never 'done'; we can always do better.

### Empowering people

Our approach is to empower everyone working in our company to be curious and creative. 'Creativity' is one of our key values and innovation is a cross-business discipline, rather than the responsibility of a specific team.

Our Workforce 2025 strategy will embed our commitment to developing our innovation culture. Our plans include putting innovation at the heart of our leadership development programme, and providing training to increase our cohort of agile innovators and design-thinkers.

We will further invest in a programme of 'entrepreneurship' coaching and mentoring. This will help our people to be commercial in the development of their business cases and creative in leveraging external help (by using, for example, accelerator programmes to source funding).





## 3.4 Leading in innovation continued

### Outcome 10 continued

#### Investing in ideas

We will continue to operate our internal ideas management platform, IdeasBase, which enables people to propose ideas. We will use this platform to promote specific challenges to encourage cross-functional working. 'InvestQuest', a Dragon's Den-style competition that creates an exciting way to take these ideas forward with specific funding, will also continue.

#### Innovation ecosystem

We partner with a wide range of organisations in order to continuously challenge and refresh our thinking, tapping into skills and knowledge in the local economy as well as within national and international bodies. We see high value in the diversity of skills, backgrounds and perspectives that our partners bring. Working with our partners transparently and collaboratively has a multiplier effect on our innovation endeavours.

#### Ofwat IAP test areas

- Engaging customers
- Delivering outcomes for customers
- Targeted controls, markets and innovation



**With NWL we are applying the knowledge and tools to innovate the future of the water sector by joining together business, academic research in cities and infrastructure and ICT.**

Newcastle University

Creative problem solving, open innovation, horizon scanning, technology transfer and academic research are a key part of our innovation 'ecosystem'. We plan to enhance this ecosystem by investing in new capabilities and by building up our engagement with smaller companies. We will do this by:

- Being transparent about our challenges and publishing a calendar of events throughout the year;
- Removing barriers to entry for collaboration projects, eg running open innovation challenges;
- Creating shared data environments with trusted partners to solve social issues;
- Leveraging 'safe' physical and digital environments for experimentation and testing;
- Developing facilities for prototyping and demonstrating innovative products and services;
- Supporting calls for funding rounds with our academic partners; and
- Seed funding ideas to get them off the ground.

Developing these capabilities will enable companies working with us to rapidly refine and roll-out solutions at scale.

#### Effective collaboration

We have great partners in the form of universities, technology leaders and pioneers in their respective industries. Strategic research and innovation partnerships give these organisations unique access to our business operations and the types of challenges that we face. In return, they give us early sight of their latest thinking and product developments. Our strategic partners include IBM, O2 and Durham and Newcastle Universities.

**171** Our collaborative delivery model is described in more detail in Section 3.6

Examples of the way in which we nurture these partnerships include the following:

- We are part of a diverse group of companies that comprise the CK Group. This gives us access to a considerable amount of expertise relating to asset management, data science, energy, logistics, business start-up and retail. We meet regularly with our sister companies from across the globe to exchange ideas and lessons learned from initiatives, including participating in special interest conferences. The recent Social Costs of Streetworks project is a tangible example of our collaboration, which leveraged energy sector investment to benefit our customers and communities, and will lead to less disruption when we do streetworks;

- Our employees take on volunteer roles in the leadership and direction of national and regional organisations actively involved in promoting and supporting innovation. These include: CBI, LEPS, Chamber of Commerce, RTC North, Newcastle University Council, UKWIR and the Green Innovation Policy Commission; and
- Our role as a member of the CBI Innovation Council gives us access to insights from other industries and has allowed us to put 'water' on the business innovation agenda, by highlighting the work that is already ongoing in the sector. An early outcome of this partnership is that the CBI led one of the design sprints at the 2018 Innovation Festival, exploring how business might better serve visually impaired customers and employees. We will continue to leverage this network further to bring expertise into our company from beyond the industry.

Within our NW operating area, where we have additional opportunities to influence innovation through our engagement in the entire water cycle, we lead in a number of regional collaborative activities to support innovation:

- We set up Run2 Innovation, a collaborative forum for sharing insights into new technology and services, and for accelerating their adoption into asset investment schemes delivered through our Run2 partners;



## 3.4 Leading in innovation

continued

### Outcome 10 continued

- We are a founder and key delivery partner of the North East Water Hub, funded by the European Regional Development Fund. Through the Water Hub, we work across sectors to support business growth and stimulate local businesses, particularly those from sectors other than water, to innovate to address challenges and opportunities in water; and
- We are a headline partner of the NE Innovation Supernetwork. This partnership works across the North East to stimulate collaborative innovation and business growth by providing a platform for open innovation and brokering finance for start-ups and growth-ready SMEs.

Our experience in collaborating with others has been hugely beneficial to us and our partners. We want to take this further, including in our ESW operating area, both within and beyond the water sector. In order to deliver this we will actively highlight the opportunities in water for innovative companies in other sectors. In collaboration with our regional and national partners and with CK Group companies, we will put in place the platform to allow conversations, joint projects and sharing of ideas, expertise and best practice.

### Marketplace for innovation

We have great processes in place for generating ideas. Like a lot of companies, we have an employee ideas portal, where we issue challenges – our employees are incredibly engaged in this area. We also collaborate widely and openly, so are often approached by partners with ideas from other industries. Lastly, there are the Innovation Festivals, which generate hundreds of ideas. Following the 2017 festival we took forward 34 ideas and are now progressing 42 from the 2018 festival.

In terms of innovation, like many companies, our biggest challenge is how to progress ideas through to value. There are a number of reasons for this, which are mostly connected with the fact that we run critical, large and complex physical networks. We are taking steps to improve this, most notably through the Digital Twin. We also feel that we can leverage our reputation for innovation and the convening power of the CK Group to improve velocity through a better connection with external innovators. Accordingly, we are investing in the establishment of an ideas development marketplace.

### Ofwat IAP test areas

- EC** Engaging customers
- OC** Delivering outcomes for customers
- CMI** Targeted controls, markets and innovation

## £125m

Since 2020 we have invested £125m in digital innovation

We are currently testing out this approach with a platform called Topcoder. The platform has a membership of 1.3m software engineers and data scientists from more than 190 countries. The community includes the full spectrum of participants from one person start-ups through to industry giants such as IBM and GE. The community members compete over an automated platform to produce multiple deliverables for us to evaluate. Our intent is to use the open nature of the platform where appropriate, and to build a specialist community of innovators who have (or acquire) expertise in water-related problems. Our intention is to make this platform available to the rest of the water industry.

### Digital innovation

'Digital' is an area that we have invested in heavily (£125m from 2015-20). We have transformed our major systems, putting in place a modern architecture with open interfaces. These systems are designed to support more agile ways of working and our assets are becoming smarter every day. This gives us a strong base from which to deliver highly personalised customer experiences.

We are already leveraging the new possibilities opened up by cloud-computing, which allow us to easily gather wide-ranging information about our assets and the environments in which we operate at ever increasing scale. Our equipment generates vast amounts of data and many different types of sensors are now economically feasible. All of this means we can run more efficient and resilient networks, which we have started to use to deliver continuous improvement. We will use emerging digital technologies and services to engage our customers, offering faster, often real-time, responses to both simple and complex enquiries and problems. Digital innovation will also enable improvements in environmental performance and help us meet our ambitious goal for zero pollution.

Our ambition is to be the most digital water company in the world. We want to make sure that we maximise the opportunities that advances in technology can bring. Accordingly, we have organised ourselves such that both technology and innovation are managed together at an executive level, by our Group Information Services Director.

**A** Our Digital Vision is detailed in Appendix 3.8

## **3.4 Leading in innovation** continued

### Outcome 10 continued

#### Unrivalled employee experience

Our investments have yielded state-of-the-art employee experiences for all of our customer-facing employees. Our contact centre agents enjoy the benefits of being able to quickly identify the history that our customers have had with us across all channels of engagement. Our field employees use an app-based experience that was designed to make their lives easier. However, our customers' and our employees' expectations rightly continue to change. We will use deep analytical techniques such as machine learning to generate maximum insight to continually enhance the experiences we deliver.

We are also looking to digital innovation as a means to increase the resilience of our workforce. We will use advanced visualisation and decision support tools. We will work with our partners to build a mixed reality experience that will help us to train our operational employees.

We will augment this by enabling our knowledgeable engineers who do not want to fully retire to become an extension of our workforce. They will be able to assist our less experienced engineers without leaving the comfort of their living rooms.

#### Unrivalled customer experience

We plan to build on the digital transformation that is currently happening in order to deliver personalised and inclusive services at a lower cost through digital innovation. In particular we will provide data-driven insights that will help raise customer awareness and promote behavioural change.

This includes providing detailed information about water use (such as numbers of machine washing cycles and comparative shower use), providing early warnings of leakage, and giving advice to customers on the best times to water their gardens based on local weather data, weather forecasting and soil moisture data.

We will also use this detailed water-use information to underpin the novel tariffs that we will co-create and test with our customers.

We will continue to work with our technical and creative partners such as IBM, Reece Innovation and Hedgehog Labs to source the sensors, communications technology and software applications to make this happen.

#### Ofwat IAP test areas

- **EC** Engaging customers
- **OC** Delivering outcomes for customers
- **CMI** Targeted controls, markets and innovation

#### Shared customer data

We have invested in making sure that the quality of our customer data is high. We will leverage this to ensure that our services are fully inclusive and address the needs of all of our customers. In collaboration with other service providers in the public, social enterprise and charitable sectors, we will develop and use secure data sharing environments so that customers who may need additional support are identified early and that support for those customers is integrated across agencies and is delivered by the most appropriate service provider.

#### Shared asset and built environment data

We will use digital innovation so that we, along with other utilities, public and emergency services, and transport authorities can deliver reliable and resilient services. This will include developing a multi-agency buried asset mapping platform in collaboration with Ordnance Survey and a data sharing hub for service level and dynamic asset data, in collaboration with BT.

#### Artificial Intelligence

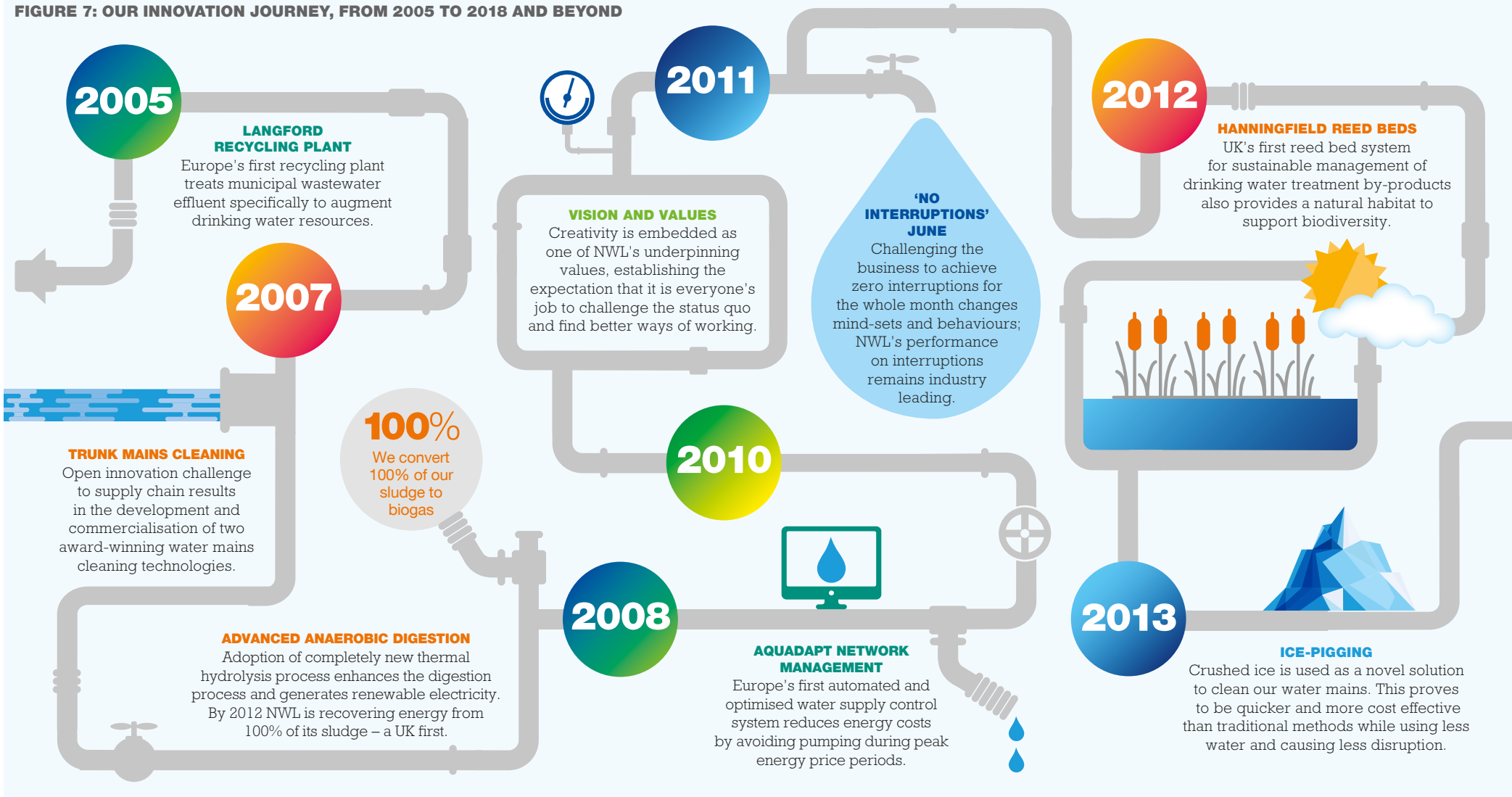
We will use digital innovation to make sense of the vast amount of historical and new data that is becoming available to us. The sheer volume of data and complexity of the systems that it relates to means that even the best manual approach will fail to make effective use of it. Only if we process it through artificial intelligence can we hope to surface the latent insight in areas such as:

- Anticipating customer needs and routing contacts to the employee who is best placed to serve them;
- Supporting agents with real time AI analysis and recommendations (including on aspects such as language and tone of voice);
- Providing customers and employees with voice assistants, such as Alexa;
- Improving revenue collection and identifying customers who are at risk of falling into arrears and determining the most appropriate remedial actions;
- Capturing and enhancing asset data (using machine vision and image recognition) and providing real time recommendations for maximising asset performance and asset life; and
- Increasing physical and cyber security by identifying anomalies in behaviour of systems and people.

## 3.4 Leading in innovation continued

### Outcome 10 continued

FIGURE 7: OUR INNOVATION JOURNEY, FROM 2005 TO 2018 AND BEYOND



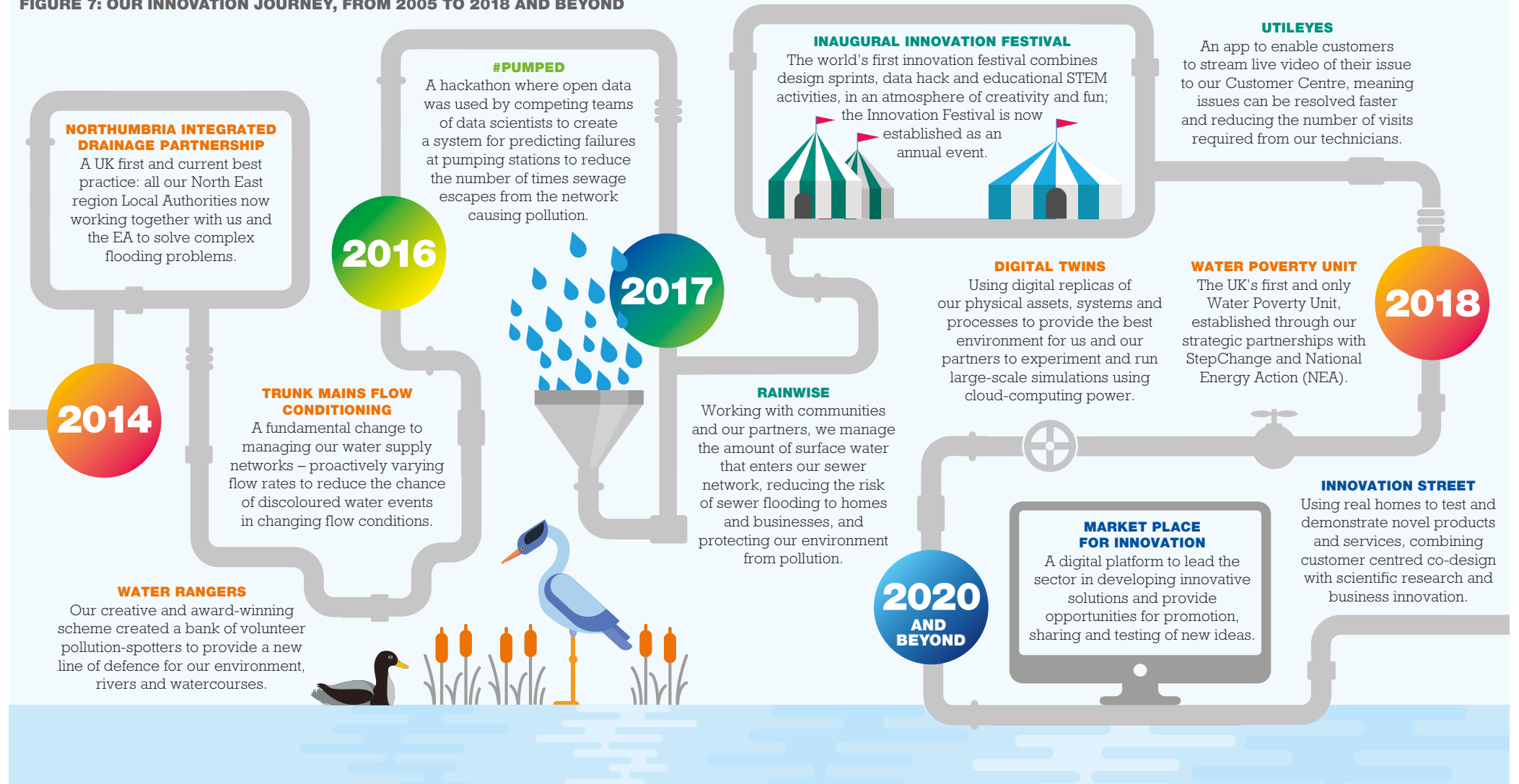


## 3.4 Leading in innovation

continued

Outcome 10 continued

FIGURE 7: OUR INNOVATION JOURNEY, FROM 2005 TO 2018 AND BEYOND



## **3.4 Leading in innovation** continued

### Outcome 10 continued

#### Sensors and communications

Data is critical to our ambitions for digital innovation: we need to understand how customers are using services, and what level of service they are receiving; we need to know where our assets are, how they are performing and what condition they are in; ideally we need contextual information relating to environmental conditions and third party assets and services. We also need to collect and process information.

Working with all of our innovation partners we will develop and use a range of innovative sensors:

- In-pipe robots to inspect and map sewers;
- In network fibre optics to convey real time information on network conditions;
- Aerial imagery (from drones, manned aircraft and satellite) for monitoring extensive areas for leakage, flooding and pollution;
- Non-contact and passive sensors for wastewater applications; and
- Passive sensors for zero-power environmental monitoring.

For data relating to our workforce safety and wellbeing, we will seek to study developing concepts such as the use of wearables and the analysis of the data that can be captured. We will also explore the use of Industry 4.0/ Internet of Things technology such as low-power broadband communications and 'edge' processing.

#### Innovation operating model

##### Our operating model

We have in place an innovation model that supports rapid progression of ideas and technologies, and we target areas where a step change in performance is required. We plan to build on our use of the four 'lenses of innovation' to spot these opportunities:

- Challenging orthodoxies: identifying performance improvement opportunities and continually questioning "Is there a different way to do this?";
- Harnessing discontinuities: spotting patterns and trends that could change the game;
- Leveraging strategic assets: thinking about how we can leverage the strengths of the company and the CK Group; and
- Understanding unarticulated needs: spending time with customers and employees and observing their interactions with our services.

#### Ofwat IAP test areas

- **EC** Engaging customers
- **OC** Delivering outcomes for customers
- **CMI** Targeted controls, markets and innovation

We use the design sprint approach (inspired by Google Ventures and adapted to fit our challenges and opportunities) to enable us to break new ground, push the boundaries of what might be possible and to think big. Design sprints help us to truly understand the problem we are trying to solve, put the person right in the middle of the problem and give us tools for creating solutions. They are a fundamental part of our learning process.

Alongside our sprints we hold 'data hacks' where a data science approach is used to generate insights from large amounts of data, through the application of statistical analysis and more automated processes such as machine learning. For example, through a data hack using our sewage pumping station data we now use pump start/stop and run-time data to accurately forecast when pumps are deteriorating in performance before they actually fail altogether and to alert asset owners immediately to performance issues at any sewage pumping station. This enables timely and efficient intervention, so preventing potentially polluting discharges to the environment. We have also saved energy as early intervention means we minimise pump run time, and therefore energy consumption.

#### World first for sewers

**We are the first company in the world to install a fibre-optic 'nervous system' in a live sewer network.**

This innovative technology, developed by nuron, a company set up to exploit the growth of fibre for high speed digital communications to support the wastewater industry, enables us to measure water depth, flow and temperature in real time, every five metres along a sewer pipe.

Using this data we can manage our sewer network proactively and predict and resolve issues before incidents occur.

Our nuron pilot will help us understand how best to install the fibre in our sewers, while proving the technology is effective, and providing evidence of benefits. It will also highlight any changes we need to make in how we operate and maintain the sewer network.

The nuron system is dual-purpose: it can also deliver secure and reliable fibre communications for broadband, 5G and smart cities. This enables nuron to take a commercial approach to funding, meaning that our customers will not have to meet the full costs of installing the fibre network.

This technology has the ability to transform the way our wastewater infrastructure is managed, and will be a key aspect of our proposed smart sewer network.



## 3.4 Leading in innovation

continued

### Outcome 10 continued

#### Innovation Festival

Innovation is enabled by bringing diverse groups together in a creative environment to share ideas and experience. In 2017 NWL brought about a step-change in innovation in the water sector; the concept of an Innovation Festival came from our vision to deliver innovation at scale and speed.

The concept of the festival was to run a large number of sprints and data hacks side-by-side, stimulating an incredible amount of collaboration and creativity. The inaugural event, held in 2017, attracted six headline sponsors, around 140 other organisations and 1,000 delegates. They included innovation experts, scientists, engineers, designers, local businesses, universities, schools, artists, customers and members of the public. Thanks to the success of the first event, in 2018 we doubled the size of the Innovation Festival, collaborating with more than 500 of the world's leading businesses and nearly 2,000 delegates to tackle 13 major social and environmental challenges. In line with our aspirations on waste and the environment, the 2018 festival was a zero waste event.

147 Some of the ideas that came out of the festival are highlighted at the end of this section

Alongside the main event, we ran activities aimed at increasing the awareness of STEM based careers. In 2018 we involved more than 650 school students in four STEM workshops.

The NWG Innovation Festival is a flagship for innovation in the water sector and in the region and is now set to become an annual event.

#### External challenge

We have been privileged to benefit from the expertise of our external Innovation Panel. Chaired by Dr Piers Clark from Isle Utilities, the panel is formed of people widely recognised to be leaders in innovative thinking. We recruited them from a mixture of existing suppliers, CK Group entities and beyond. We wanted to have diverse opinions, so the panel has been drawn largely from outside of the sector, including leaders from Amazon, Apple, Arsenal, Compare-the-Market, IBM and National Grid.

#### Ofwat IAP test areas

- EC** Engaging customers
- OC** Delivering outcomes for customers
- CMI** Targeted controls, markets and innovation

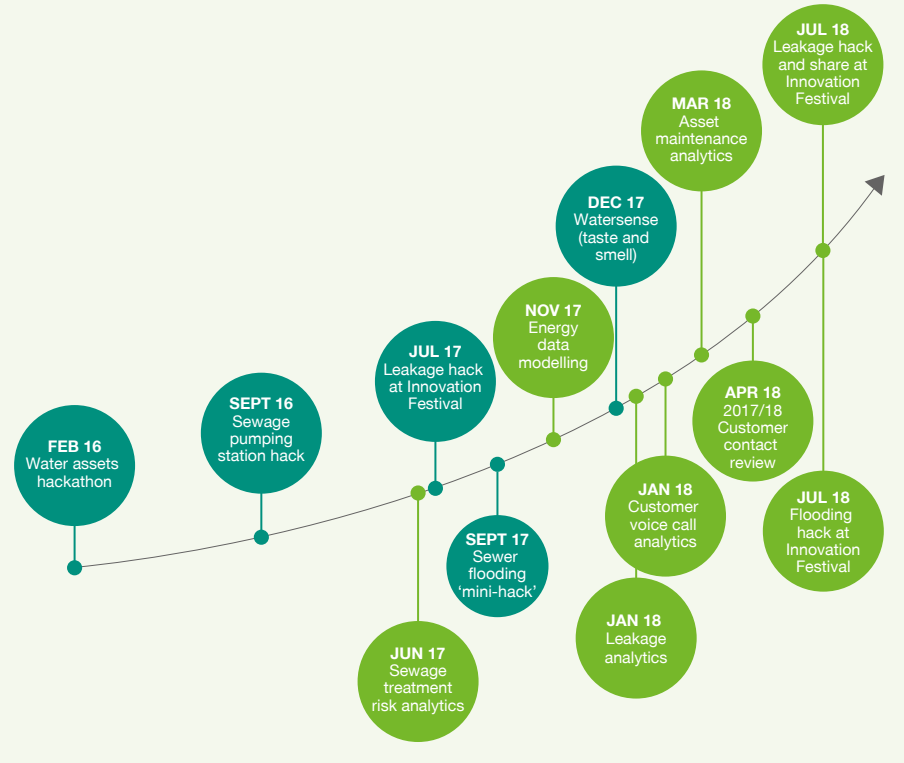
### Our intelligent evolution: our data science journey

As an asset heavy and customer-rich organisation, we generate more than 18m data points every day from our customer engagement, asset sensors and environmental monitoring systems.

**We recognise that we have a responsibility to leverage the value of data in order to deliver the best possible levels of service to our customers.**

By investing in data science capabilities, we are building on the early successes of our exploration into this area.

We are committed to 'innovation with a purpose', and data science is no different – focused on delivering an unrivalled customer experience, and exceeding our customers' performance expectations in an efficient way that represents value for money.





## 3.4 Leading in innovation continued

### Outcome 10 continued

The panel's role has been to scrutinise our business plan strategies and proposals, and to challenge our ambition to be leading in innovation for the water sector and beyond. We explained our approach to innovation in the context of the challenges facing the water industry and we asked them one simple question "Do you think our approach and the results (to date) are world-class?". We held a series of meetings with the panel to consider the challenges they posed to us and we refined our plan accordingly, notably introducing the Marketplace for Innovation and broadening the scope of our innovation collaboration, already illustrated in the range of organisations that participated in our 2018 Innovation Festival.

The panel will continue to challenge and to act as a sounding board for innovation during 2020-25. It will also advise us on facilitating the adoption of new ideas and minimising any barriers to embedding the innovation in the business, such as meeting any regulatory hurdles and finding ways of funding pilot activities.

#### Ofwat IAP test areas



Engaging customers



Delivering outcomes for customers



Targeted controls, markets and innovation

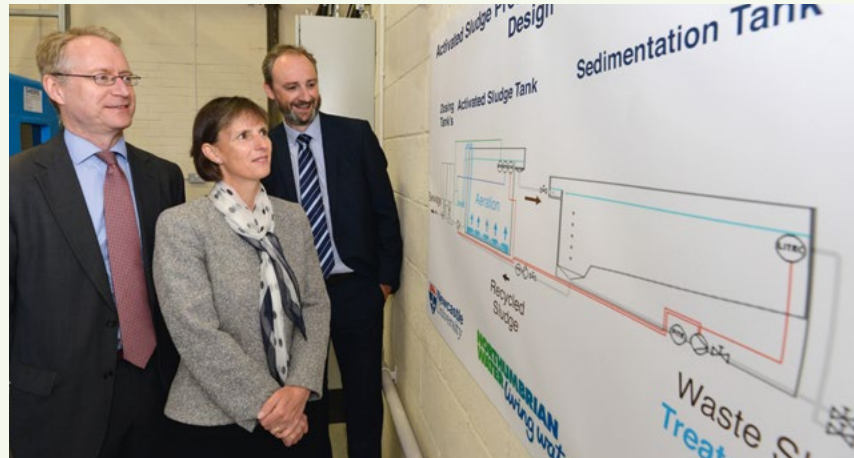


**It really came across that innovation isn't something that is done by a discrete separate team but it is something that is passionately and enthusiastically owned by staff across the business.**

**Dr Piers Clark**  
Chair of the Innovation panel  
Isle Utilities

### BE:WISE: Advanced biology for water engineering

Newcastle University and NWL are transforming wastewater treatment.



**Through our innovative partnership, we have established BE:WISE, an international centre of research excellence and experimentation for wastewater management technology, at our Birtley STW. BE:WISE is the largest facility for biological wastewater research in Europe.**

How we treat wastewater in the future is at the centre of global challenges in waste, public health, climate change, clean energy generation and the economy. Wastewater treatment needs to do more at lower cost and with minimal ecological impact and microbes are key to creating sustainable pathways for clean water and sanitation.

BE:WISE is accelerating innovation in sustainable wastewater treatment, experimenting with low-energy biological treatment technologies and developing low-cost ways to generate energy from waste. Our intention is to develop a state-of-the-art, revolutionary process, not just for NWL but world-wide.

### Open innovation

Open innovation is having a culture of transparency and candidness around our challenges and shortfalls. It also includes having the leadership to empower people. We are committing additional support to helping our teams understand and articulate their challenges and find external partners to help develop and implement solutions. We are also keen to share our learning and learn from others across the industry.

We are planning a number of specific initiatives to develop our wider innovation ecosystem, which we will have in place for 2020-25. These include our Innovation Street, digital twins and living labs.



## **3.4 Leading in innovation** continued

### Outcome 10 continued

#### *Innovation Street*

'Innovation Street' will enable novel solutions to be showcased and tested in real homes. Newcastle University Science Central is currently building several dwellings under its Future Homes project. The 'homes' will be age-adaptable, in that the space will be designed and constructed such that it can be reconfigured as the occupiers' needs change through their lives. Future Homes will fuse a programme of public conversations and citizen centred co-design with scientific research to create a test-bed where entrepreneurs, established businesses and new entrants to the market can develop new solutions to the challenges faced by society today.

We are collaborating with Newcastle University to include water and wastewater services among the challenges to be considered. In this way we are seeking to build on our customers' understanding of their water and wastewater services, their perceptions of these services, and their views about value for money. Innovation Street supports our commitment to inclusivity, serving every customer according to their individual needs and aspirations, and in particular focusing on helping people to reduce their household bills and minimise their impact on the environment.

Innovation Street will be a showcase for leading-edge living, but to us it is more than that. We believe it is a unique opportunity to collaborate with a wide range of partners to co-create great life experiences that benefit customers and the environment. We are in discussion with manufacturers such as Samsung, service providers like CGI and Amazon and our communication partners like O2 and Three to see how we can combine our capabilities to make people's lives more economical, convenient and enjoyable.

We discussed Innovation Street with customers and other stakeholders at one of our 2018 Innovation Festival sprints. One concept to emerge that we are taking forward is 'Barnacle' – a device that provides early warning of potential problems with a customer's water supply by detecting changes in water quality parameters. The concept is for a low-cost, easy to install sensor and communications package that is placed in the cistern of the customer's main toilet. If any anomalies are detected an alert is sent direct to us. Widespread use of Barnacle devices will allow us to determine whether issues are localised or indicate a wider supply problem. In either case, we can take appropriate action to inform the customer and address the problem without them needing to initiate contact with us. We will continue to develop this concept with our stakeholders.

#### *Digital twins*

Data is also important for our physical assets. We have started working with partners on developing digital twins. Digital twins are digital replicas of physical assets, processes and systems that can be used for optimising the system, training our employees, and tactical and strategic planning. A digital twin continuously learns and updates itself from multiple sources to represent its status, working condition or position.

#### Ofwat IAP test areas

- **EC** Engaging customers
- **OC** Delivering outcomes for customers
- **CMI** Targeted controls, markets and innovation

A digital twin can be used to monitor and control complex systems and also to create a safe environment in which to innovate and experiment. Successful ideas, once proven, can be 'uploaded' to the real system, either digitally or as a physical intervention.

As part of our 2018 Innovation Festival we held a digital twin design sprint where we engaged with businesses outside of the water sector (including from banking, manufacturing and F1 motorsports) to explore how they have used digital twins to drive performance. We identified, prototyped and demonstrated how digital twins will help us deliver our outcomes – from decision support during operational incidents to designing customer-centric business processes. We developed a high-level strategy for introducing digital twins into our business, highlighting the need to address key issues such as organisational culture and data.

## 3.4 Leading in innovation continued

### Outcome 10 continued

For our inspiration here, we turned to a scale-up business founded as a gaming platform. Many of the capabilities needed for that, such as 3D expertise and complex-event processing (multi-player in the games world) are extremely useful when it comes to simulation of large-scale physical networks. We are now working with the company on a series of use-cases including long-term asset health and optimisation of renewable energy generation.

Most importantly, the digital twin we are working on will leverage the power of cloud computing to run large-scale simulations. This will afford us an open platform to share data on operational issues. Our partners will be able to experiment with new interventions to see how they would perform in real-life conditions over time. We see this as a genuinely original approach that will open up new possibilities within our sector and help us build resilience.

### Living Labs

Living Labs is a build on tried and tested concepts known variously around the industry as ‘shop window’, ‘innovation playground’ and our own BE:WISE. Whilst these initiatives have undoubtedly moved the industry forwards, we believe that they have some inherent shortcomings, the most notable being that they do not usually represent the full range of conditions that exist in the network. For that reason, we are expanding our efforts by developing four separate zones (including the existing BE:WISE) to cover water (north and south) and wastewater (urban and coastal). The zones will be available to collaborators for final testing and demonstration of near market products. The Living Labs will typically be used after the idea has been tested and simulated using a digital twin. Taken together, we believe that these capabilities will significantly speed up time-to-market, allowing ideas to be turned into value for our customers, our company and the wider industry as a whole.

### Ofwat IAP test areas

- EC** Engaging customers
- OC** Delivering outcomes for customers
- CMI** Targeted controls, markets and innovation

### Measuring our performance in this area

We will publish information on our innovations and will track the changes in our performance that arise from the new activities we undertake.

In addition we will use the indicators set out below to ensure that our people are engaged in innovation, that our processes are supporting rather than stifling innovation, that we really stretch ourselves in terms of novel and creative ideas and that we capture and apply lessons learned as we innovate.

### How we will measure innovation

Metric	Target	How we will measure it
<b>Time</b> Amount of time participants feel they can spend being creative.	Managers spend 10% of their time each week on creative activities and experimentation.	Survey mix of key participants on scale of 1 to 10.
<b>Risk</b> Tolerance of failure.	Abandon rate of 20% (ie, aim to ensure that at least 20% of innovation projects are stopped early in the idea-project process).	People will talk more freely about what didn't work and why.
<b>Total innovation reach</b> Amount and variety of idea originators.	30% of target employees submit at least one new idea each year.	We measure this using our IdeasBase portal.
<b>Total innovation potential</b> Potential value of the pipeline.	Idea pipeline will have potential value of £20m assessed quarterly.	We measure this using our IdeasBase portal.
<b>Throughput</b> The speed at which an idea moves through the process, from idea to value.	75% of ideas move through the process in less than 12 months.	We measure this using our IdeasBase portal.
<b>Conversion rate</b> Percentage of ideas that become working innovations.	20% of submitted ideas turned into real-world innovations.	We measure this using our IdeasBase portal.
<b>Impact on ODI</b>	Contribution to achievement of ODI from innovation.	Where possible, conduct quantitative analysis of benefit.
<b>Learning</b>	100% of ideas are assessed and fed back into our processes and culture.	We measure this using our IdeasBase portal.



## 3.4 Leading in innovation continued

### Outcome 10 continued

#### Our annual Innovation Festivals

In 2017, we planted England's first ever pollution-reducing moss tree in the centre of Newcastle, we implemented a data-led approach to tackle leakage and we harnessed the power of artificial intelligence to better serve our customers. These were all fresh new ideas arising from perhaps the most innovative idea of all – the ground-breaking NWG Innovation Festival.

**More than 1,000 people from 140 organisations spent the week understanding the challenges, exploring solutions, developing and testing prototypes and pitching ideas, including:**

- **The moss tree:** moss cultures in the 4 metre high tree in Newcastle's busy Haymarket filter pollutants, binding them to the leaf surface then integrating them into their own biomass, making them ideal air purifiers. Data gathered by technology in the tree "structure" is being made available for universities and other bodies to feed into their own research on tackling pollution;
- **Leakage hot-spots:** in partnership with PA Consulting and 1Spatial, we have created a 'heat map' approach that means we can direct our resources more efficiently by finding the biggest leaks and prioritising their repair;

- **Alexa Skill for Water:** when looking at the vast potential of artificial intelligence, we turned to one of our youngest employees, 19-year old Apprentice Mark Ireland to follow up on an idea from CGI's 'Tomorrow's World' sprint to develop an Alexa Skill for water. The 'skill' allows customers to fire questions at their Alexa system about their water account or whether there is a water supply problem in their area; and
- We held a **competition** for older teenagers to design the teenager's bedroom of the future. One of the winners went on to gain a sponsorship from us for an Arkwright scholarship. We also hosted a STEM Fayre for younger school children facilitated by the Centre for Life in Newcastle, with more than 250 children taking part.

2017

140

organisations  
working together

1,000

attendees

2018

500+

organisations  
working together

2,500+

attendees

**In 2018 we did it again, attracting headline sponsors in addition to those who made the inaugural event possible – drawn from within and beyond the sector.**

The sponsor organisations were joined by people from another 500 organisations, keen to tackle a mix of customer-facing, environmental, technology and societal challenges. We also worked with our LEP and the NE Water Hub to facilitate greater involvement by regional SMEs.



The design-thinking approach, combined with the huge diversity of participants and festival atmosphere combined to produce a rich vein of implementable ideas, including:

- **'Going Deeper Underground'** – a project to create an underground map of UK infrastructure showing all of the water, sewerage, power and telecoms assets;
- **'Smart Objectives'** – exploring the concept of a low-cost 'smart' sensor to fit into customers' toilet cisterns to monitor incoming water quality and detect internal plumbing losses;
- **'Digital twins'** – prototypes for using real-time dynamic data sharing and visualisation that supports decision making during operational incidents; and
- **Every Drop Counts** – a social media campaign #ToiletTuesday to encourage customers to find and fix leaky loos, potentially saving an estimated 500 million litres of water a day and reducing customers' bills.





# Improving the environment

“ In its Defining the Conversation research, the environment was one of the areas where customers said they expect NWL to ‘talk to someone else’ about how to deliver these outcomes, ie specialist organisations that can use their expertise to speak on customers’ behalf. With our members’ expertise we contributed by forming an environmental sub-group to provide challenge. We are delighted to have been able to give the company confidence to take a step change in its ambitions for the environment, as shared in its ‘Improving the Water Environment’ scheme, launched at the 2018 Innovation Festival. ”

**The Water Forums**



## Mutual respect for our natural resources

“ We make a living from nature so it’s in our best interest to do all we can to protect it. ”

Christy and Hew Willet farm 470 hectares of land at Parklands Farm at Galleywood, on the fringe of Chelmsford. Here the mother-and-son team grow wheat, barley, oats, oil seed rape and spring beans. As the fifth generation of her family to farm this land, Christy knows the importance of protecting the environment for the future. Working closely with us, she uses the latest research and technology to get the most from the land while protecting the water beneath it. This strikes a perfect balance between earning a living today and making an investment in tomorrow.



Click here to view Christy and Hew’s story, or scan the page in your Zappor app.



# 3.5

## Improving the environment



Our improving the environment theme has two outcomes:

- We help to improve the quality of rivers and coastal waters for the benefit of people, the environment and wildlife; and
- We take care to protect and improve the environment in everything we do, leading by example.

The first of our environmental outcomes covers our responsibility towards good quality water at our rivers and beaches and our regulatory obligations to improve the environment. The second outcome presents our above and beyond approach to the wider environment.

Our ambitious goals for improving the environment are to:

- Be leading in the sustainable use of natural resources, through achieving zero avoidable waste by 2025 and being carbon neutral by 2027;
- Demonstrate leadership in catchment management to enhance natural capital and deliver net gain for biodiversity;
- Have the best rivers and beaches in the country; and
- Have zero pollutions as a result of our assets and operations.

Ofwat IAP test areas

- EC Engaging customers
- OC Delivering outcomes for customers

### Theme overview

**We will create a step change in our environmental activities, building on our role as stewards of the environment to demonstrate leadership, and to protect and improve the environment within our regions.**

We have set out ambitions to protect and improve the environment which require us to go far above and beyond our regulatory obligations. Our actions will help contribute to Defra's goals as outlined in its 25-year plan for the environment, and will support others to make a difference in these areas.

Our commitment to the environment is: 'To work with others to play our part and demonstrate leadership in providing an enhanced and sustainable environment. We will value the natural capital and the ecosystem services the environment provides, and will improve access and recreation, to meet the needs and aspirations of our customers, partners and communities.'

The innovations in this area that will deliver the difference for our customers are:

- Further increasing efficiency and capacity in our bioresources activity, which already enables us to turn 100% of our sewage sludge into renewable energy;
- Expansion of TriM and DRIVE, our novel trigger management system and dynamic risk index model, to allow us to prioritise operational activities to protect and improve the quality of rivers and coastal waters;
- A partnership approach to managing pollution and misconnections as part of our pollution management programme, led through our award-winning Water Rangers initiative; and
- Our 'Improving the Water Environment' scheme which will see us invest £2m to work in partnership to enhance the areas of streams, rivers, lakes, reservoirs, wetlands, beaches and coastline that our customers can access.

## **3.5 Improving the environment** continued

### Outcome 11

We help to improve the quality of rivers and coastal waters for the benefit of people, the environment and wildlife.

#### Why this outcome is important

As a water and wastewater operator, we have a significant interaction with rivers and coastal waters. Our customers value the environment highly (Service Valuation, 2017; Service Measures, 2017), and we take our responsibility towards the water environment very seriously.

As an ethical company, we want to manage our assets and operations to avoid environmental effects and to benefit the environment wherever possible. Our interactions with the water environment offer opportunities for us to go above and beyond our regulatory obligations.

This will allow us to play our part in protecting and improving the rivers and beaches within our regions. It will also help safeguard the natural capital that we rely on as a business, and will help us build environmental resilience in the face of growth and climate change pressures.

#### How our customers' views have shaped the plan

Rivers and beaches are essential for a healthy environment, providing quality experiences for leisure and recreation purposes. Customers are supportive of improvement and investment in river water quality, but want to see this investment shared fairly between us, our partners, customers, big businesses and key polluters (River Water Quality, 2016). They expect us to take a particular role in prevention and influencing others to do their part.

#### Ofwat IAP test areas

- EC** Engaging customers
- OC** Delivering outcomes for customers


**We aim to be an EPA 4\* company demonstrating excellent performance across all factors.**

Although the quality of bathing water is not the primary reason customers choose to visit a beach, they do want the bathing waters in our regions to be of the highest quality (Bathing Water Quality, 2015). Our customers have told us that they want us to meet or exceed our regulatory obligations in relation to bathing water (Service Valuation, 2017).

Through compliance with regulatory targets and continued investment, we strive to ensure that the rivers and beaches within our operating areas are free of sewage litter and have high-quality water that is not impaired by our activities. Our plans for investment in the WINEP and our targets for managing our operational impact on rivers and coastal waters will contribute towards this.

We have taken our customers' views into account when developing our ambitions for the wider environment.

**161** See Outcome 12

#### What our plan will deliver for customers

Beyond excellent overall environmental performance, there are two key areas in which we can contribute towards our ambitious goals: our investment in the WINEP, and by managing our operational impact on rivers and coastal waters to optimise positive environmental improvements.

This links to a transformation in our catchment approach and an increased scale of activity for catchment management.

#### Overall environmental performance

We work very closely with the EA to manage the environmental effects of our water and wastewater operations and to act responsibly towards the environment. The EA's annual Environmental Performance Assessment (EPA) for the water industry considers and rates companies according to seven performance factors. There are four star ratings: 4\* (Industry Leading Company); 3\* (Good Company); 2\* (Company Requires Improvement); and 1\* (Poor Performing Company). This assessment is periodically reviewed and updated. Our aim is to be an EPA 4\* company, demonstrating excellent performance across all factors, and we are working hard to achieve this within the earliest timescale possible.

## **3.5 Improving the environment** continued

### Outcome 11 continued

#### Investment in the WINEP

Through the WINEP we will make an important contribution to the single largest national investment programme in the environment. Our investment in this area will help us achieve our ambitious goal to have the best rivers and beaches in the country.

We have worked closely with the EA, and with NE, to agree our contribution to the WINEP for 2020-25. Together, we have ensured that our WINEP programme is acceptable for our customers, will allow us to maximise improvements, and will provide opportunities for us to go above and beyond.

Our aim is to make sure that our customers' money will be invested in well-justified schemes that will deliver real and measureable improvements to the environment. These improvements are considered enhancements in our business plan. We will deliver a much larger number of schemes in 2020-25 than in 2015-20. In total, through the WINEP, we will invest £187m in the environment.

**A** See Appendix 3.2

There are timeline differences between the water industry planning process and river basin management planning for the third cycle of the WFD (2021-27). This introduces ongoing uncertainty. The provisional ministerial sign off date for revised River Basin Management Plans is December 2021. Some WFD requirements will therefore remain uncertain within this business plan. We propose a cost adjustment mechanism (in accordance with the Ofwat methodology reference section 9.4.3) in order to ensure that our customers will not have to pay for schemes and outcomes that have not been delivered.

**A** See Appendix 3.9

In delivering the WINEP, we will apply the principles of our Integrated Approach to take a catchment-based approach to delivering water and wastewater services. This will involve joining up planning and agreeing shared objectives with partners for better management of all our catchments. This will ensure that when we design our schemes, we consider catchment and sustainable solutions that allow us to work with others to achieve multiple benefits for the environment. This will also contribute to our ambition for brilliant partnership working.

Taking a catchment-based integrated approach will help to drive other sector improvements and will contribute to the delivery of national objectives including those set out in Defra's 25-year plan, the Biodiversity 2020 strategy and the Natural Environment and Rural Communities Act 2006. These activities will help us achieve our ambitious goal to demonstrate leadership in catchment management to enhance natural capital and deliver net gain for biodiversity.

The environmental improvements we will deliver against specific drivers within the WINEP from 2020-25 are as follows:

#### Drinking Water Protected Areas (DrWPA):

We will invest £2.97m in catchment management. We will continue to work with farmers to manage pesticides and other contaminants in raw water, but enhance our catchment activity, linked to our commitments as part of our above and beyond approach. Our focus will be on our Safeguard Zones (SGZs), on the Whittle Dene reservoirs, River Coquet and Berwick groundwater in our NW operating area and the Rivers Chelmer, Blackwater, Stour, Waveney and Bure, and Hanningfield and Abberton Reservoirs in our ESW operating area. We have also made a commitment to increase the areas of our SGZs that are supported by agri-advice partnerships.

#### Ofwat IAP test areas

- EC** Engaging customers
- OC** Delivering outcomes for customers



**In total, through the WINEP, we will invest £187m in the environment.**

**£2.97m**

we will invest £2.97m in catchment management work with farmers

In our ESW operating area, pesticides, remain a key focus, although nitrate is increasingly becoming a challenge so alongside our engagement and awareness raising programme, we will provide support grant funding for farmers to invest in measures to reduce point and diffuse pollution from pesticides and nitrate. We will continue to work through and build upon our existing partnerships on the Rivers Chelmer, Blackwater and Waveney, as well as formalising partnership working on the River Stour. In our NW operating area, in addition to farmer engagement on the SGZs, we will support farmers to make improvements in the farmyard, and to keep livestock out of watercourses, to reduce cryptosporidium risk. We will also work with land managers to control nitrates around Berwick in order to protect our groundwater sources. Our support of peat restoration work in the upper Tees catchment will continue, in partnership with the North Pennines Area of Outstanding Natural Beauty Peatland Programme. This will be achieved through supporting the Tees-Swale Heritage Lottery Funded project which is aiming to restore 250 hectares of peatland in the Tees catchment.

## 3.5 Improving the environment continued

### Outcome 11 continued

#### Natural Environment & Rural Communities (NERC) Act:

We will create two flagship schemes in 2020 to deliver multiple ecosystem service benefits for the environment, the South Tyne Holistic Water Management Project in our NW operating area and a catchment project to be agreed with stakeholders in our ESW operating area. These projects will invest £0.9m through partnership working to deliver measured improvements in biodiversity and river quality through work across 80,000ha in our NW operating area and 18,000ha in our ESW operating area. We will also invest £1m in improving priority habitat both on our own landholdings, and within the catchments in our operating areas linked to our Branch Out scheme.

#### Ofwat IAP test areas

-  Engaging customers
-  Delivering outcomes for customers



**We will invest £1m in improving priority habitat.**

### WFD and the Fairshare Challenge

The Water Framework Directive (WFD) aims to improve water management across Europe by focusing on integrated management at river basin scale.

**Under the WFD, the country is partitioned into river basins (such as Northumbria and Anglia), within which are management catchments (such as the Wear and East Suffolk), operational catchments, and waterbodies. Waterbody status is assessed by the EA under a number of criteria, with the aim of meeting Good Status for all waterbodies by 2027.**

Water and sewerage companies have already made huge improvements to water quality elements by removing excess phosphorus and ammonia from STW effluent, but standards for phosphorus treatment are becoming much tighter, and there is still more to do to address phosphorus status failures.

As part of the WINEP, we agreed with the EA that we will implement additional phosphorus treatment at 27 STWs in 2020-25, at an estimated cost of £99m.

In keeping with the 'polluter pays' principle, the permits we have been set for phosphorus have been agreed on a 'fairshare' basis, which means that although we will improve water quality in a number of waterbodies, we will not see changes in WFD status unless other sectors (usually agriculture) do their bit too. This makes it hard to demonstrate the benefits of investment to our customers.

In order to achieve our ambitious goal to demonstrate leadership in catchment management, we are working with our partners through CaBA to agree the best ways to make WFD improvements at waterbody level.

Through local discussions and use of the SAGIS Optimiser Tool, we have identified eight operational catchments/groups of linked waterbodies where we have the support of our partners to explore catchment approaches.

Taking a catchment approach will allow us to identify opportunities to support agriculture in doing their bit. For example, if we use payments for ecosystem services to reduce agricultural diffuse pollution as all or part of a phosphorus removal solution, then we can help farmers to understand the challenge in their area and support them to tackle the issue.

We may also identify opportunities where we can do more than our fairshare to support other sectors, and to drive improvements in WFD status through our own investment as part of our 'above and beyond' approach to the environment. This will help us meet our ambitious goal to have the best rivers in the country.

**Eel Regulations:** We will continue our programme of improvements at our assets that represent barriers to migratory fish, investing a further £3.3m. This includes creating three further fish passes in the Upper Wear and putting in place eel screens at our raw water intake at Barrasford. Further improvements are also being undertaken at Abberton and Hanningfield.

**Invasive Non-Native Species (INNS):** We will invest £1.25m to carry out investigations and assessments and improve our processes where required to increase biosecurity and minimise the risk of the spread of INNS through our water operations. We are also supporting others to manage INNS in the catchments upstream of our water abstractions. We will develop a new companywide INNS strategy to enhance existing processes to ensure that we always consider biosecurity issues within our business operations.





## 3.5 Improving the environment continued

### Outcome 11 continued

#### Urban Waste Water Treatment

**Directive:** We will invest £56.8m in ensuring that we meet our obligations to treat wastewater effectively and reduce controlled discharges. This will allow us to provide increased capacity for storm water storage and treatment of flows at our STWs, helping build our resilience in this area.

Through this investment we will also have more robust measurement technologies and methodologies in place to manage flows at our STWs and within our network, including on our CSOs. We will address our most frequently spilling CSOs through the national Storm Overflow Assessment Framework.

#### Bathing Waters Directive (BWD):

We will invest £7.5m to protect and enhance water quality at designated bathing waters in our NW operating area. We will carry out three investigations at Tynemouth Cullercoats, Marsden and Redcar Granville to ensure that no deterioration occurs in bathing water quality and understand actions we can take to improve quality further. If these investigations identify significant opportunities for enhanced management of our wastewater assets, we will then undertake improvement schemes at Marsden and Redcar Granville.

We will also carry out catchment-scale investigations at ten bathing waters to understand the actions needed to achieve Excellent and Good classifications.

#### Water Framework Directive:

The WFD drivers make up the largest proportion of the WINEP and cover both water and wastewater operations. In total, this represents £112.5m of investment with £4.75m for water and £107.8m for wastewater operations, to deliver an expected 450km of improvements to water courses.

#### Ofwat IAP test areas

**EC** Engaging customers

**OC** Delivering outcomes for customers

### £56.8m

investment to ensure we meet our obligations to treat wastewater effectively

### £7.5m

investment to protect and enhance water quality at bathing waters in our NW operating area

### £112.5m

of investment to deliver an expected 450km of WFD improvements to water courses

We will:

- Investigate the sustainability of a number of our groundwater abstractions in our operating areas. We will also begin a new scheme to ensure the sustainability of our abstraction from the Fell Sandstone near Berwick in our NW operating area, following investigation in 2015-20;
- Review the impact of a number of our reservoir and river abstractions and carry out adaptive management trials to create more natural flow conditions in some downstream rivers in our operating areas;
- Continue our investigations into the Pont Transfer in our NW operating area to understand how we can improve river morphology and ecology within the waterbody;
- Carry out investigations relating to the Magnesian Limestone aquifer in our NW operating area to confirm the source of nitrates into the Stoneygate borehole and to assess possible saline intrusion affecting coastal boreholes;
- Undertake chemical investigations to deliver a continuation of the Chemicals Investigation Programme (CIP), a national programme coordinated through UKWIR and supported by Defra and the EA. We will undertake trend monitoring of key chemicals in STW discharges, and investigate emerging substances of concern (including pharmaceuticals and microplastics). We will also carry out monitoring and control of specified chemicals found to be present in the effluent from four of our STWs highlighted during CIP monitoring undertaken since 2010;
- Remove ammonia from three STWs in our NW operating area to ensure no deterioration in status; and
- Remove phosphorus from 27 STWs, comprising investment at one STW to ensure no deterioration in status and at 26 STWs as part of following a 'pathway to Good'. This will increase the number of our STWs with enhanced phosphorus treatment to 48 out of our 160 largest STWs with numeric consents. We estimate that we will increase our regional phosphorus removal load by 28% during 2020-25.



## 3.5 Improving the environment continued

### Outcome 11 continued

The EA has developed a key performance indicator 'kilometres of river enhanced' to quantify the level of improvements achieved which can contribute to meeting WFD objectives. In total, our contribution to this measure for the Northumbria River Basin is expected to be 450km, and we expect to improve phosphorus status within 12 waterbodies to Good status and within five waterbodies to Moderate status as a result of our investment (on a fairshare basis where applicable). There are no km of improvements for our ESW operating area as ESW is a water-only company.

Working through a catchment-based integrated approach will allow us to deliver a level of improvement to WFD waterbodies over and above our baseline WINEP commitment, as measured by the EA's 'kilometres of river enhanced' metric.

This section has set out our baseline WINEP commitments, but we also aim to go 'above and beyond' these regulatory obligations to deliver further enhancements for the environment in 2020-25.

159 See Outcome 12

#### Ofwat IAP test areas



Engaging customers



Delivering outcomes for customers

### Managing our operational impact on rivers and coastal waters

We abstract water from reservoirs, rivers and groundwaters to supply 1.1 billion litres of water to customers in our NW and ESW operating areas every day. In our NW operating area we then take wastewater from customers' properties and discharge treated effluent into rivers and the sea from over 400 STWs. Our water and wastewater treatment operations also create a solid waste by-product – sludge – which is safely returned to the environment by being spread on agricultural land as a recycled and beneficial product.

We aim to reduce the adverse environmental effects of our operations as much as possible, and promote improvements in the environment, by making sure that we meet and comply with our regulatory obligations, and that we work within relevant national and international legislation. This includes the Water Resources Act 1991, the Environmental Permitting Regulations, the NERC Act, the Code of Practice on Conservation, Access and Recreation, and a number of European Directives.

We have strict environmental targets and standards to meet to protect rivers and coastal waters. We continually challenge ourselves to improve our environmental performance in order to meet our customers' expectations that we are responsible and effective custodians of the environment. This also helps us build operational and environmental resilience.

Some environmental effects can be caused by our customers' use of the water and sewer networks. Excessive water use in the home can affect the volumes of water we need to abstract and supply to customers. Customers flushing away wet wipes or disposing of fats, oils and grease down the sink can lead to blockages in our networks, which then cause uncontrolled discharges.

Our operational impact on rivers and coastal waters cuts across five key areas:

- Abstraction;
- Discharges;
- Pollution;
- Misconnections; and
- Bathing waters.

### Abstraction

We have strict abstraction licences for all of our sites. These make sure that we do not take out more water than the environment can support. Our objective is to minimise the environmental effects of our abstractions while ensuring a reliable supply of water for our customers.

The sustainability of our abstractions is monitored by the EA, and where required, sustainability investigations are completed using the WINEP or in the case of time-limited licences, through the abstraction licence renewal process.

Ofwat has asked all water companies to have AIM schemes for 2020-25, in order to reduce the environmental effects of abstracting water at environmentally sensitive sites during defined periods of low surface water flows.



## 3.5 Improving the environment continued

### Outcome 11 continued

When an agreed water level or flow trigger threshold has been reached at an environmentally sensitive site, abstraction should be reduced so that it is less than the agreed baseline daily quantity.

After assessment with our stakeholders, we are confident we have only one site (Ormesby Broad in our ESW operating area) that meets the criteria for being included in AIM. This site also has local interest from our partners in the management of water levels.

#### Discharges

##### *Continuous discharges*

The EA sets permit standards for the quantity and quality of treated effluent that is discharged into rivers, estuaries and the sea. These standards are set individually for each of our WTWs and STWs, taking into account the level of treatment required to protect receiving waters. Our objective is to achieve 100% compliance for all of our licences and permits (this includes both numeric and descriptive permits).

#### Ofwat IAP test areas



Engaging customers



Delivering outcomes for customers



**Our objective is to achieve 100% compliance for all our licences and permits.**

### **DRIVE: A game-changing risk model to improve rivers and coastal waters**

**DRIVE (Dynamic Risk Index and Visit Effectiveness) is a new tool that allows us to understand real-time compliance risk across all of our STWs.**

Failure to comply with our permits at descriptive STWs can cause pollution incidents, while failures at numeric STWs impact on treatment works compliance.

DRIVE uses data from our trigger management system (TriM), and combines this with asset health data so that we can identify high-risk sites in real time. This provides visibility to allow us to reallocate resources effectively from areas of low to high risk and take action to improve treatment. Previously, we would only carry out an annual risk assessment for all of our sites based on static datasets.

In the future we are looking to include sewage pumping stations, CSOs and scheduling of bioresources movements to provide a comprehensive risk platform across all of our wastewater operations. By applying DRIVE, we can pro-actively prevent sample failures or pollution incidents, and are helping to protect and improve our rivers and coastal waters.

DRIVE is currently a wastewater only tool. However, we are exploring opportunities to use it within water, starting with working with our Water Quality team to incorporate flow cytometry data into the model.

We have a very strong discharge compliance record and traditionally this has been an area where we have held an excellent industry position for all of our numeric STWs. This is partly due to our 'over performance' approach which aims to reduce compliance risk and build resilience, through doing more than meeting baseline requirements in order to protect the environment. The new measure of overall compliance with environmental permits, as reported in the EPA, now includes performance of discharges from both STWs and WTWs, which presents us with a challenge.

We know that future permits will tighten as legislation changes. We are also aware that the pressures of increasing population, new housing, industrial developments and climate change will challenge our performance. We will continue to lead in this area, despite the increasing number of more complex permits and tighter consents that we will need to adhere to from 2020.

To do this we will invest in maintaining our infrastructure and support systems and managing our processes even more effectively to build resilience into our operations. This includes implementing TriM and DRIVE, our innovative operational management and early warning systems. These systems have been adopted for both numeric and descriptive permit works, with considerable increased operational intervention being invested at our descriptive works in order to prevent permit non-compliance and potential resulting pollution incidents. We will also sponsor innovation in this area through increased and improved instrumentation, including online quality monitoring for turbidity and phosphorus and telemetry.

## **3.5 Improving the environment** continued

### Outcome 11 continued

The majority of our WTW discharge compliance risk is due to the use of chlorine within our water treatment processes, for which we have very tight permits in comparison with others. However, high levels of iron, pH, suspended solids and aluminium can also cause failures. To improve performance in this area, we have developed an activity plan that includes site risk assessments and developing site plans. It focuses on enhanced early warning and investigation, taking advantage of the systems already developed for managing and improving STW discharge compliance.

We have invested in a new more reliable method of measuring chlorine levels in discharges that avoids false positives. This is fully accredited by UKAS and now in operation. We will also target investment in our WTWs to manage treatment performance more effectively and to reduce or remove the environmental consequences of asset failure.

### Intermittent discharges

In heavy rainfall, our wastewater network discharges greatly diluted storm water, containing untreated sewage, into high flowing rivers and the sea through CSOs. These intermittent discharges, which are typically screened to capture sewage related solids, ensure that our systems can continue to pump, transport and treat wastewater. Importantly, they help to prevent our sewers flooding customers' properties and disrupting shared infrastructure such as transport networks.

We are industry leaders in the deployment of sewer level monitoring (SLM) technology, with over 98% coverage of our 1,415 CSOs. SLM fulfils the requirements of event duration monitoring. By 2020 we will have completed a programme to install SLM at all of our CSOs, together with monitoring technology for other types of intermittent discharges at STWs and pumping stations.

### Ofwat IAP test areas

- EC Engaging customers
- OC Delivering outcomes for customers

## Zero

our Pollution Management Programme (PMP) will help us to achieve our ambitious goal for zero pollutions

Continued investment in SLM technology and trend analytics helps us predict where issues such as potential pollution and flooding incidents are likely to occur. We are then able to detect and resolve problems at a warning level before they cause an issue.

Since 2012, there have been 1,332 instances when operators were alerted and attended a site to clear a problem before there was any overflow. We also use monitoring data, together with other service information (such as blockages), in proactively investigating high frequency spilling CSOs, resolving maintenance issues that are found to be the cause, and taking forward hydraulic capacity problems.

From 2020, we are committed to undertaking extensive investigations for 127 frequently spilling CSOs and taking forward a number of cost-beneficial solutions to reduce spills. This activity forms part of the WINEP, under the 21st Century Drainage Storm Overflow Assessment Framework.

### Pollution

Our objective is to prevent all pollution incidents. Pollution incidents can occur as a result of both water and wastewater operations. Incidents are categorised as: Category 1 (major, serious, persistent and/or extensive impact); Category 2 (significant impact); Category 3 (minor or minimal impact); or Category 4 (no impact). Once identified, incidents are managed by the EA and processes are put in place to ensure that repeat incidents are minimised.

Our current pollution performance is close to industry leading, and we anticipate that all types of pollution incidents will reduce much further in future years. This is due to the development and implementation of our multifaceted Pollution Management Programme (PMP). This includes a partnership approach and our award-winning Water Rangers initiative, and is overseen by our Pollution Best Practice Group.



## 3.5 Improving the environment continued

### Outcome 11 continued

Our PMP was initiated in 2015 as a transformative action to eradicate pollution incidents by developing a culture focused on all aspects of pollution risk. This will help us to achieve our ambitious goal for zero pollutions.

The PMP concentrates principally on our wastewater operations where we carry the majority of our pollution risk, but also includes activities that reduce risk in our water service. It comprises:

- Activities and investment targeting specific asset groups (sewage pumping stations and CSOs);
- Water industry benchmarking;
- Development of improved data and analytics through information technology business intelligence systems;
- Community and partnership working through Water Rangers and CaBA; and
- Other innovative activities including design sprints held with technology and software specialists to develop new early warning capabilities, advanced analytics and new types of sensors.

It also links into the approaches adopted to maintain and improve discharge compliance.

#### Misconnections

Our objective is to reduce the number of polluted surface water outfalls (PSWOs) by reducing the number of properties with misconnected drainage.

Misconnected drainage can cause significant water quality issues for our rivers and coastal waters. Foul water drainage that is wrongly connected into surface water drainage at customers' properties allows wastewater to flow directly into rivers and the sea through PSWOs. Once contamination at an outfall is identified, it is reported to the EA and recorded as a pollution incident. When operational sources of pollution have been ruled out and our investigations confirm the presence of misconnections, the EA allocate the incident to a 'third party' and the outfall is added as a PSWO due to misconnection in the pollution management system.

We currently have 277 PSWOs in our pollution management system, and we receive around 59 new PSWO notifications each year. We carry out an average of 4,000 detailed property surveys a year. We use our technical staff and survey crews to identify misconnected properties in response to reported pollution incidents and issues identified within the sewerage network. Once a property has been identified as having wrongly connected drainage we work closely with our customers to help them correct it, undertaking advice and re-inspection visits and holding community education/engagement activities in key catchments.

#### Ofwat IAP test areas

- Engaging customers
- Delivering outcomes for customers

# 4,000

we carry out an average of 4,000 detailed property surveys of pipe connections each year

At the end of 2015 we expanded our Misconnections Team, increasing the number of survey crews we have operating, in response to greater numbers of PSWO notifications received and an increased focus on misconnections within our NW operating area. This is due to expanding CaBA activity, which means that our partners are out and about working alongside a greater number of rivers and streams, and our own WFD catchment investigations into intermittent discharges.

These investigations, carried out between 2015 and 2017, were originally targeted at adverse water quality impacts from our CSOs. However, monitoring evidence has diverted attention towards misconnections and PSWOs causing chronic pollution, which increase the background level of pollutants, particularly ammonia and P, within our catchments.



## 3.5 Improving the environment continued

### Outcome 11 continued

From 2020-25, we will maintain our level of activity to investigate misconnected drainage. Our plan is to concentrate our investigations into at least four high-priority catchments where there is evidence that misconnections present a serious water quality issue linked to a reason for not achieving good status.

As our current approach is resource intensive, and can rely on customers providing access to their properties, we will continue to explore the use of new techniques including aerial surveys. We will also work with others to identify more effective and innovative approaches to managing misconnections.

We will link misconnections issues into our Rainwise initiative, and work closely with our partners to address PSWOs. This will include continuing our support of the Connect Right campaign, supporting the Yellow Fish initiative where appropriate, and undertaking joint activity to raise customers' awareness of misconnections and help resolve issues.

#### Ofwat IAP test areas



Engaging customers



Delivering outcomes for customers



**Excellent classification at our bathing waters contributes towards our ambitious goal to have the best rivers and beaches in the country.**

### Bathing Waters

Our objective is to make sure that our coastal discharges do not adversely impact on bathing waters, so that as many of the bathing waters in our region as possible meet 'Excellent' classifications. Bathing water compliance is only relevant to sewerage companies so this objective only applies to our NW operating area.

Under the Bathing Waters Directive, the Bathing Water Regulations (2013) set out four classifications of bathing water quality for high amenity beaches designated as bathing waters: Excellent; Good; Sufficient; and Poor. The classifications are linked to the levels of bacteria measured weekly in sea water during the bathing season (May-September). It is a regulatory requirement that all designated bathing waters are classified as at least 'Sufficient'.

Our wastewater operations can affect the quality of bathing waters through continuous discharges of treated wastewater from our STWs, or through intermittent discharges from CSOs operating in heavy rainfall, which contain bacteria.

#### Continuous coastal discharges:

Our coastal STWs discharge fully treated wastewater, with the majority using long sea outfalls to protect bathing waters. To provide additional protection and reassurance to customers, we use ultraviolet (UV) disinfection at a number of coastal STWs; five STWs have UV operating throughout the bathing season and one STW has UV operating continuously.

#### Intermittent coastal discharges:

To minimise the adverse impact of CSOs on the quality of bathing waters we have undertaken a number of investigations in previous years. We have invested in our network to prevent the operation of CSOs which previously discharged into rivers or the sea close to bathing waters. Changes we have made include installing underground storage tanks to collect storm water during periods of heavy rainfall and moving outfalls away from designated sites. As a result of this investment, our CSOs should not impair bathing water quality in the bathing season, except in the largest rainfall events.

Various other sources of bacteria also have an influence on seawater quality at our beaches (inflowing streams and rivers, animals, seabirds and marine pollution). We are committed to working with others to play our part in improving the quality of bathing waters.

## 3.5 Improving the environment continued

### Outcome 11 continued

We have an excellent record of partnership working around our coastal waters within CaBA and playing a key role in the Heritage Coast and Tees Estuary Partnerships. We also work with local authorities, the EA and partner organisations, such as Surfers Against Sewage, to initiate practical approaches to protect customers. This includes sending beach alerts when our CSOs operate at the coast, working with the EA to extend its Pollution Risk Forecasting (PRF) system, and supplying nine electronic PRF signs to local authorities that inform beach users about water quality.

We are on the steering group of the £5m Heritage Lottery Fund Seascape project, and through Seascape, we will fund a Beachcare Officer to help improve coastal water quality. The role will enable the Coastal Streams Partnership (part of the Heritage Coast Partnership and Wear Catchment Partnership) to engage with customers and communities to influence customer behaviour and change perceptions around the coastal environment.

As a result of significant past investment, we are now industry leading for the percentage of bathing waters at both 'Sufficient or Better' (100%) and 'Good and Excellent' (94%). From 2020-25, the investment we will make in the WINEP to meet bathing water drivers will ensure that no deterioration occurs in bathing water quality, and that we understand what we need to do to reach the more robust Excellent classification at more of our bathing waters.

Our 'Improving the Water Environment' scheme will also see us working with our partners (including Anglian Water and Thames Water for our ESW operating area) to deliver wider improvements to the beaches and coastline within our regions.

161 See Outcome 12

All of these activities will contribute towards our ambitious goal to have the best beaches in the country.

#### Ofwat IAP test areas

- EC** Engaging customers
- OC** Delivering outcomes for customers

### Our performance commitments

#### Abstraction Incentive Mechanism (AIM)

Ofwat has asked all water companies to have AIM schemes for 2020-25, in order to reduce the environmental effects of abstracting water at environmentally sensitive sites during defined periods of low surface water flows.

When an agreed water level or flow trigger threshold has been reached at an environmentally sensitive site, abstraction should be reduced so that it is less than the agreed baseline daily quantity.

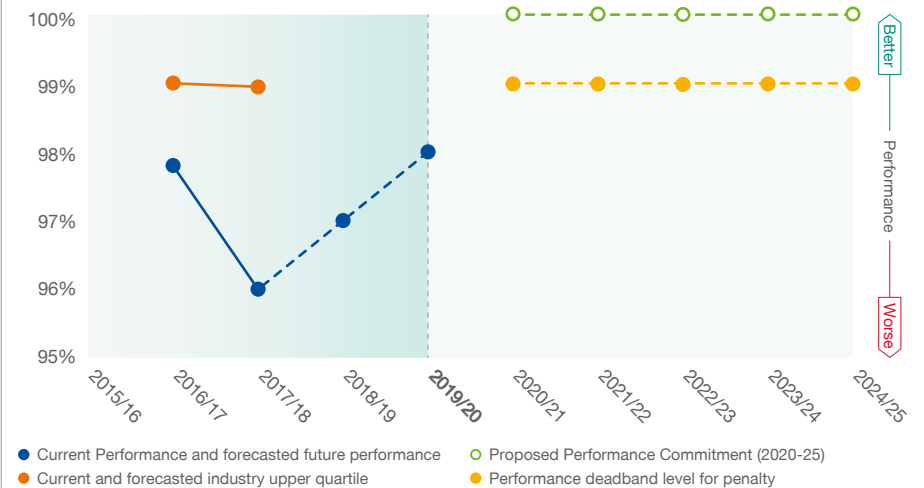
After assessment with our stakeholders, we are confident we have only one site (Ormesby Broad in our ESW operating area) that meets the criteria for environmentally sensitive sites. This site also has local interest from our partners in the management of water levels.

#### Treatment Works Compliance

This is a common measure of asset health and illustrates overall compliance with environmental permits, as reported in the EPA. It now includes performance of discharges from both STWs and WTWs.

#### TREATMENT WORKS COMPLIANCE

Percentage of treatment works complying with discharge permits



# 3.5 Improving the environment

continued

## Outcome 11 continued

We propose a PC level for 2020-25 of 100% compliance, with a penalty occurring below 99% compliance.

## Pollution incidents

We will adopt the common measure for pollution that covers only incidents relating to wastewater assets but includes serious pollutions.

In its WISER guidance, the EA set out an expectation that companies will reduce their 2016 (2016/17 reporting year) pollution levels by 40% by 2024/25. Our commitment however is to exceed this level. We have set a target in line with the industry upper quartile of 57 (19.50 per 10,000km) by 2024/25. This goes above and beyond reducing our own 2016 pollution levels by 40%, which would result in a figure of 67.

## Ofwat IAP test areas

- EC Engaging customers
- OC Delivering outcomes for customers

While we have performed strongly in 2017 (2017/18 reporting year) with industry leading performance, this measure exhibits volatility, partly due to weather variations. Maintaining performance at this level will be extremely challenging. Although this common measure includes Category 1 and 2 incidents, our aim is not to cause any serious pollutions. We propose a PC level of 20 pollution incidents per year by 2035 onwards. This demonstrates our commitment to delivering our ambitious goal for zero pollutions.

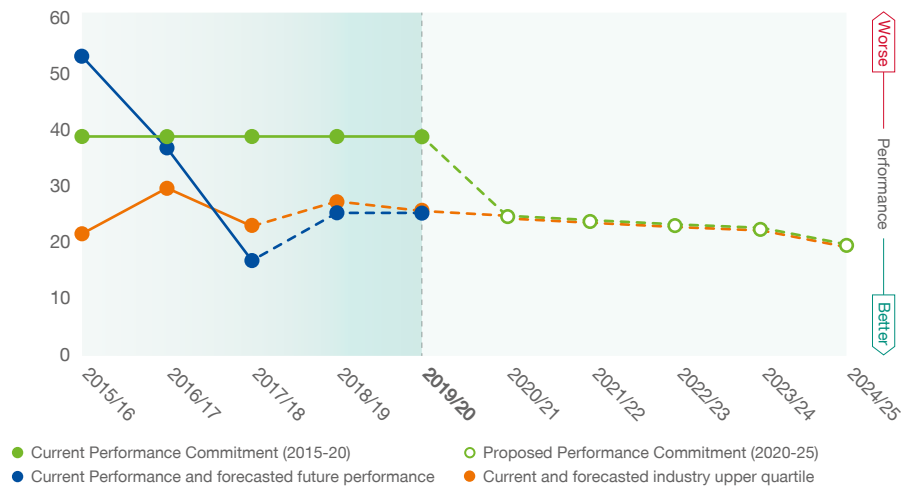
## Bathing water compliance

Our bespoke measure for bathing water compliance for 2020-25 is the number of beaches in our NW area meeting the 'Good' or 'Excellent' standard. We propose a PC of 33 out of 34 (97%) of designated bathing waters meeting these standards, which is consistent with our forecast of being upper quartile within the industry for this measure. We are committed to maintaining good and excellent bathing water quality for the beaches within our NW operating area, and to developing sustainable options with our partners towards contributing to more excellent beaches in the future towards our ambitious goal to have the best beaches in the country.

**We are committed to maintaining 'good' and 'excellent' bathing water quality standards.**

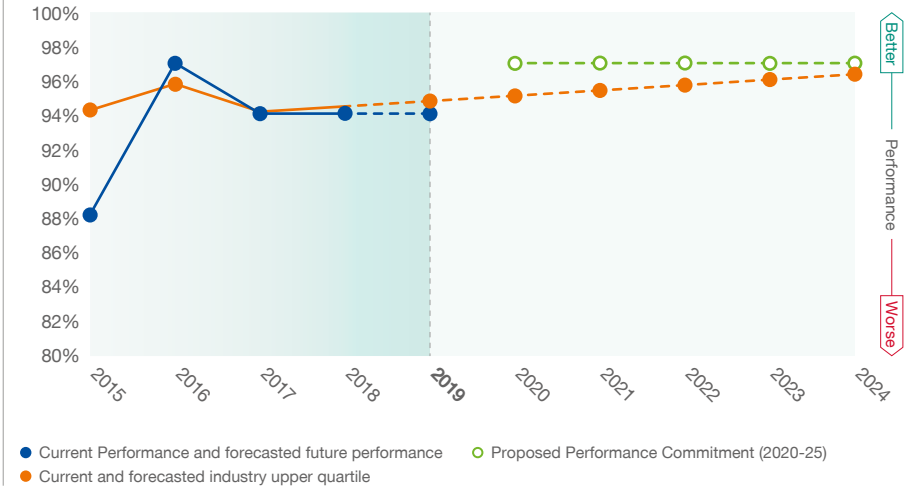
## POLLUTION INCIDENTS

Number of incidents per 10,000km of wastewater network (categories 1, 2 and 3)



## BATHING WATER QUALITY

Percentage of bathing waters categorised as good or excellent





## **3.5 Improving the environment** continued

### Outcome 12

We take care to protect and improve the environment in everything we do, leading by example.

#### Why this outcome is important

The environment provides us with natural capital – the stock of natural assets (geology, soil, air, water and all living things) from which we derive ecosystem services. These services support human life, wellbeing and prosperity, and we rely on them to provide resilient and sustainable water and wastewater services for our customers.

Our customers, and visitors to our regions, use our sites to access the environment, and we have a responsibility to provide access to our land and water, and to support recreational activities. Customers also value the environment for its wildlife and some areas of our regions are designated sites, protected for habitat and biodiversity. Playing our part in protecting and enhancing these areas is important to our customers, as well as to other stakeholders and partner organisations who represent customers' interests (Long Term Strategy, 2018).

We have a particular influence on the water environment (rivers, streams, lakes and reservoirs, wetlands, coasts and beaches) and have a role to play in helping to manage upstream catchments. We also have an impact on the environment through our carbon emissions and the wastes we produce.

#### How our customers' views have shaped the plan

Our customers tell us that they expect us to care for the environment and that we should work in partnership with other organisations to do so (Service Improvement, 2014; Bathing Water Quality, 2015; Flooding Response, 2016). We know that our customers have different ways of judging the quality of the environment from our regulators, and that their priorities for improvement go above and beyond the things we must do to meet our regulatory obligations. For example, we understand that our customers are satisfied with current standards of bathing water quality but that they would like more facilities and cleaner beaches (Bathing Water Quality, 2015).

#### Ofwat IAP test areas

- **EC** Engaging customers
- **OC** Delivering outcomes for customers

They want us to work with others to address more visible river issues that are wider than the quality of the river water itself, such as litter, facilities, ease of access and wildlife (River Water Quality, 2016).

Recognising both our customers' aspirations for the environment, and the benefits of a healthy natural environment for sustainable and resilient business activities, we have co-developed the concept of the 'wider environment' which is about going 'above and beyond' what we must do to protect and improve the environment in everything we do, leading by example.

Our service valuation engagement in 2017 showed us that our customers valued improvements to the water environment second after pollution, which can also impact on the environment. Through this research, our customers told us that they would be willing to pay for a high level of improvement to areas of the water environment that they have access to. In response to this we have developed our new innovative Improving the Water Environment scheme.

#### What our plan will deliver for customers

We are only one player within the environment, albeit a significant one, so we are committed to a partnership approach to make sure that we are supported, and that we support others, to protect and improve the environment.

Our commitment is: 'To work with others to play our part and demonstrate leadership in providing an enhanced and sustainable environment. We will value the natural capital and the ecosystem services the environment provides, and will improve access and recreation, to meet the needs and aspirations of our customers, partners and communities.'

As part of our planning process, we have agreed objectives and targets for the wider environment for 2020-25.

Our objectives for the wider environment are:

- To achieve net gain for biodiversity;
- To enhance the water environment for the benefit of our customers and communities; and
- To aim for a positive impact on the environment from our operational activities.

These objectives will help us achieve our ambitious goals for the environment. They will also demonstrate our support for the goals set out in Defra's 25-year environment plan. The detail of each objective is provided in the following sections.

## 3.5 Improving the environment continued

### Outcome 12 continued

In delivering our plan, we will use natural capital approaches to measure and understand our impact on the environment, and demonstrate progress towards our ambitious goals. 'Our Contribution' report (2017) identified a number of areas of natural capital of relevance to our business activities. We have started on this path through our work with UKWIR and with the environmental consultancy Ricardo to develop an ecosystem services and natural capital valuation framework. We will use the framework in options appraisal and post-project delivery, which will allow us to take account of and deliver natural capital enhancements through our capital investment schemes.

41 See Section 2.3

#### Achieving net gain for biodiversity

Our combined actions as a funder, advocate, facilitator and champion, as set out in our Biodiversity Strategy, will help us achieve our ambitious goal to demonstrate leadership in catchment management, to enhance natural capital and deliver net gain for biodiversity in our regions. These will also help us make a significant contribution to Defra's goals of achieving thriving plants and wildlife and enhanced biosecurity.

#### Ofwat IAP test areas

- EC** Engaging customers
- OC** Delivering outcomes for customers

**75%**

at least 75% of our land will be protected by stewardship approaches to promote nature conservation

**100%**

we will make sure that 100% of our non-operational fenland sites are managed for nature conservation

### Water & so much more

Thanks to an innovative new communication tool, our communities can see online the benefits they receive through the way we manage our land for biodiversity.

'Water & so much more' maps our estates onto main areas, such as local community, access and recreation, wetland and woodland. The user can then see how our work benefits certain ecosystem services, for example, through restoring grasslands and providing enhanced habitat to wildlife, or reducing the amount of pesticides going into the ground.

This is the first time ecosystem services have been used in this way within the water industry. It is extremely effective at enabling us to share large quantities of information on land management to a wide audience. Our aim is to increase understanding of the importance of biodiversity and to inspire others to do the same.



### Management of our own sites

Our land holding is 9,900ha in total, comprising 5,500ha in our NW operating area and 4,400ha in our ESW operating area. Of this, over 2,000ha is protected for its internationally or nationally important wildlife, including sites of special scientific interest (SSSIs), which are in varying condition status. We also have large areas of priority habitat, which represent important areas of natural capital. To help achieve our natural capital and biodiversity goal, our aspiration is that all of our land holding is managed with conservation at its heart. Achieving net gain for biodiversity through capital projects is also linked to our project legacy.

171 See Section 3.6

We have made a number of 'above and beyond' commitments in our plan for 2020-25 in relation to our own sites. For all sites across our own land holding we will:

- Develop a conservation ranking methodology, and set targets to increase the total aggregate land site ranking above the baseline;
- Review current site management and carry out surveys where required to understand the best approach and identify opportunities to promote conservation management, linked to our site ranking exercise;

- Achieve the NE target of 90% of our SSSIs in favourable condition and the remainder in at least unfavourable recovering condition, where we can control or influence their management;
- Protect SSSIs by creating areas in adjacent land that are managed primarily for nature conservation to act as a buffer;
- Where our landholding crosses identified B-lines (a series of 'insect pathways' running through our countryside and towns to link existing wildlife areas together), we will manage that land to benefit the B-lines network wherever possible;
- Use our land to support the formation of Nature Recovery Networks; and
- Continue to take on activities to support species natural to the local habitat (such as, for example, the red squirrel in the Kielder forest), and promote programmes to re-introduce species into the wild, (including introducing water voles into other areas following their successful re-introduction at Kielder).

## 3.5 Improving the environment continued

### Outcome 12 continued

We will carry out the following actions to protect and improve biodiversity on our agricultural land:

- Make sure that at least 75% of our land is protected by stewardship approaches to promote nature conservation, either through our own schemes or through externally-managed schemes if land is eligible;
- Contact all of our existing tenants and licensees to assess the level of support needed to achieve higher environmental standards;
- Consider support packages for tenants and licensees to promote conservation management if required; and
- Include quality of farming and stewardship for the environment in the assessment of new agricultural lettings.

For our areas of woodland and fenland we will:

- Ensure that 100% of our woodland sites greater than 2ha in size are managed in a way that is compatible with best practice with an approved Forestry Commission plan;
- Make sure that 100% of non-operational fenland sites are managed for nature conservation; and

- Identify areas of ancient semi-natural woodland and implement measures to make sure that these sites are in favourable condition or working towards favourable status.

We recognise that there are also opportunities to improve biodiversity on our operational sites. We will review the management of these including our operational grassland sites. We will look to enhance biodiversity where appropriate, and identify opportunities for unused land to link up adjacent areas and/or to provide protective buffers to areas of priority habitat and to better connect nature.

#### Working with others in our catchments

Our commitment is to take a catchment-based integrated approach to delivering water and wastewater services, joining up planning and agreeing shared objectives with partners for better management of all of our catchments. In addition to our catchment activities to protect raw water (114 See Outcome 8) and protect and improve river and coastal water quality (150 See Outcome 11), we make a significant contribution to protecting and improving biodiversity in the catchments within our regions, beyond our own landholding.

#### Ofwat IAP test areas

- EC** Engaging customers
- OC** Delivering outcomes for customers

### Branch Out

**Our Branch Out fund works in partnership to reconnect people and wildlife and support our regions to build resilience and adapt to climate change.**

Since 2013, more than £350,000 has been distributed to partners to support approximately 70 to 80 biodiversity and conservation projects.

From 2020, we will increase our Branch Out budget to distribute £200,000 each year to partners across our regions. We will also make changes to Branch Out to provide specific support to create at least 250ha of priority habitat within our regions, and to enhance regional biosecurity through management of INNS.

In reviewing Branch Out applications, we will continue to consider how our project funding can be used to make space for nature and to encourage and support opportunities to create a coherent and resilient ecological network within our regions.



**£350,000**

more than £350,000 has been distributed to partners since 2013

We work with a wide range of environmental partners including within CaBA to deliver conservation projects, many of which are supported by our Branch Out fund.

**178** Our approach to environmental partnerships is set out in Outcome 14

We see an opportunity to enhance biodiversity and natural capital within our catchments through natural flood management (NFM), which uses catchment management approaches and nature-based solutions to hold back water on the land. NFM tools also deliver other benefits for the environment, for example peat restoration and woodland planting.

NFM can help manage downstream flooding in urban areas, and reduce pressure on our wastewater network. Examples of NFM work include the Defra-funded Upper Wear project, and at local-level where catchment projects link to SuDS or our Rainwise scheme or where we support other CaBA projects.

NFM approaches will also be included within our planned holistic catchment management projects in the South Tyne and within an Essex catchment to be confirmed with partners and stakeholders.



## 3.5 Improving the environment continued

### Outcome 12 continued

As one of the tools used for NFM, we strongly support the planting of trees, where this fits with local conservation objectives. Trees can be used for phytoremediation (uptake of pollutants) and bank protection to protect raw water in our reservoirs and rivers. Trees also promote carbon sequestration and improve air and water quality. Woodlands are important priority habitats that are under threat. We will manage woodlands on our own sites as part of our actions to improve priority habitat and, where appropriate, plant trees to contribute to NFM. We are working with our partners to identify opportunities for tree planting in our regions.

As a water company, we have a key role to play in regional biosecurity. Water company activities are diverse, with land and assets being used for a multitude of business and recreational activities, which may allow contact with INNS and which creates potential to transfer INNS around our regions. We contribute to catchment-level INNS work through Branch Out and through our business-as-usual activities to manage known areas of INNS on our own sites linked to WINEP schemes. In addition, we will demonstrate leadership in assessing and managing biosecurity risks through our activities and operations and applying protection measures.

#### Ofwat IAP test areas

- EC** Engaging customers
- OC** Delivering outcomes for customers

### Kielder Water & Forest Park Development Trust



**We helped to establish the Trust in 2010 with the aim that seven organisations would work together to develop England's largest forest and our own Kielder Reservoir as an internationally renowned destination.**

The partnership success story includes investment of around £10m, award wins such as Best Large Visitor Attraction, achieving international Dark Sky Park status, and safeguarding over 450 jobs (directly and indirectly).

The collaboration will further support the area's sustainable development and improve the recreational facilities it offers, including:

- Expanding Kielder Observatory to include a 60-seat planetarium;
- Reintroducing native wildlife species and associated opportunities for people to engage with wildlife through digital technology alongside our natural resources;
- Creating a 'world cup' rated downhill mountain bike trail; and
- Working in partnership with local authorities to bid to gain government funding for the rural regeneration of Borderland counties.

We will develop a companywide INNS strategy incorporating biosecurity and a biosecurity action plan. This will include assessing all of our raw water transfers for INNS spread, undertaking surveillance monitoring for INNS, and applying biosecurity measures on our own sites.

### Enhancing the water environment for the benefit of our customers and communities

Our customers are very supportive of us working to improve the environment, and want us to work in partnership to deliver wider improvements beyond just water quality (Flooding Response, 2016; River Water Quality, 2016). We know through our service valuation research that our customers are willing to pay more for water environment improvements. We also know that our partners are very supportive of us showing water environment leadership within our regions.

We have therefore had the confidence to work with others to develop an innovative partnership approach to drive the delivery of water environment improvements in our plan. This will allow us to do more than our WINEP commitments, and deliver wider improvements beyond enhancing 450km of rivers and coastal waters to meet WFD objectives.

## **3.5 Improving the environment** continued

### Outcome 12 continued

We will lead the delivery of 'above and beyond' activities to visibly improve accessible areas of rivers, streams, lakes, reservoirs, wetlands, coasts and beaches within our regions, in the areas where our customers can enjoy the water environment and see the benefits of environmental investment.

To achieve this, we launched our 'Improving the Water Environment' scheme at the 2018 Innovation Festival. From 2020-25, we will invest £2m to initiate and support this scheme, which will see us work closely with our partners through CaBA to develop a plan for packages of improvements to be delivered within our regions from 2020.

Our investment will include a cash injection of £500,000 in the scheme in 2020, and the appointment of seven to eight new catchment-level and administrative/ management employees. These roles will oversee planning, funding and delivery of the improvements with support from partners, and provide focused support for Catchment Partnerships and our work with CaBA.

We anticipate that significant additional funding will be leveraged into the scheme and that the scheme will be supported through delivery of joint projects. This might include, for example, using relevant local authority investment as match funding, and using cash and grant funding from new and existing partners within our regions, including business and industry.

The scheme will deliver packages of improvements for the 'accessible' water environment. For example, at parks and country parks, stretches of rivers and coastline with well-used footpaths, and reservoir sites, it is our aim to exceed our regulatory requirements as set out in the Water Industry Code of Practice on Conservation, Access and Recreation. Packages will be co-created by partners and will include customer consultation and engagement. They will be jointly funded by partners, and will be delivered largely through partnership working, although single partner improvements will also count.

#### Ofwat IAP test areas

- EC Engaging customers
- OC Delivering outcomes for customers

**£2m**

we will invest £2m in our 'Improving the Water Environment' scheme

We will establish an external governance structure to oversee the scheme, which will have close links to the Water Forums to represent customer interests, and link closely to the Catchment Partnerships, Local Nature Partnerships and regional bodies such as the Regional Flood and Coastal Committee.

Water environment improvements under this scheme will also contribute to other catchment measures, enhancing natural capital and supporting national delivery of the Government's 25-year plan for the environment, including:

- WFD 'element' improvements contributing to the EA's 'km river enhanced' measure;
- Areas of new or improved priority habitat (measured in hectares);
- Number of trees planted including urban trees;
- Drinking water protection from agriculture and our internal catchment management KPIs;
- Measures to promote NFM; and
- Other natural capital measures.

We anticipate that our capitals approach will play a key role in allowing us to measure the impact and to demonstrate the multiple benefits of partnership improvements to the water environment.

We have linked this scheme to a new PC for 'length of accessible water environment improved in partnership for the benefit of customers and communities'. We propose that this PC is a financial ODI, where 50% of the reward will be contributed back into the scheme after we have recouped our costs, so our customers can reinvest in the scheme to support further improvements should it prove to be successful. The level of water environment improvements we estimate would need to be delivered to allow us to recoup our upfront costs invested in the scheme is 300km. We recognise this is ambitious, but our commitment to invest in this approach demonstrates the strength of our support for delivering improvements to the water environment.

The scheme will allow us to support our partners to undertake activities to improve the environment for the benefit of our customers and communities. This is a completely new approach to investing in, delivering, and measuring improvements to the water environment, and its success will require significant external support and adaptation within our regions.

## **3.5 Improving the environment** continued

### Outcome 12 continued

We estimate that we have around 1,000km of accessible water environment in our regions. If the scheme is able to attract significant environmental investment, we anticipate improvements could go well beyond our proposed 50km target, helping us achieve our ambitious goals to demonstrate leadership in catchment management to enhance natural capital and deliver net gain for biodiversity, and to have the best rivers and beaches in the country.

#### Aiming for a positive impact on the environment from our operational activities

There are two other areas in which we want to go 'above and beyond' to have a positive impact on the environment from our operational activities: energy and emissions; and cutting waste.

#### Energy and emissions

We believe that we need to show leadership in seeking to reduce our energy consumption and our greenhouse gas emissions (considered here as carbon emissions). We will set an example to other water companies and to other businesses within our regions by demonstrating that it is possible to achieve carbon neutrality. This will help us collectively reduce our national emissions and respond successfully to the challenges of climate change.

We have a very strong emissions record, both in reducing our energy consumption and our emissions. Since we established our carbon management plan in 2009, we have reduced our operational emissions by 46%. As a result of changes to our sourcing of electricity, we will also reach and exceed our target of achieving a 50% reduction on 2009 levels by 2018, two years earlier than forecast. In comparative terms we are among the best performers. We now intend to build on this position of carbon leadership.

Significant energy use within the water industry has meant that until now the concept of carbon neutrality has seemed unachievable. However, through a combination of reducing our demand, purchasing zero-carbon electricity and maximising renewable generation, we now believe carbon neutrality to be achievable, without undertaking carbon offsetting. Our ambitious goal is to become operationally carbon neutral by 2027. This goal will be extremely challenging, but we believe it to be achievable, with considerable progress towards this being realised by 2025.

To achieve this, we will improve our energy efficiency and purchase zero-carbon grid electricity. We will also maximise our production of renewable energy, both electricity and bio-methane, and at some locations will export the energy, enabling us to develop a positive carbon position. This will include seeking to enhance our anaerobic digestion activities by sourcing feedstocks (third party sewage sludge, food waste, or agri-feedstock).

#### Ofwat IAP test areas

- EC Engaging customers
- OC Delivering outcomes for customers

# 46%

we have reduced our operation emissions by 46% and we will also reach and exceed our target of achieving a 50% reduction on 2009 levels by 2018, two years earlier than forecast



**We have developed an ambitious goal to become operationally carbon neutral by 2027.**

One area of focus will be around transport. We are developing plans and piloting options around compressed renewable methane, hydrogen and electric vehicles. This will allow us to start the roll out of a fully carbon-neutral fleet. All new vehicles will be zero emission from 2024.

We see energy storage playing an increasing role as we progress these activities. While it effectively increases net consumption, it moves energy demand from high demand to lower demand periods, which reduces the level of assets required in the energy sector. Energy storage will also play a key part in energy resilience for our sites.

Our emissions reduction will not be limited to greenhouse gases. We will install new lighting on our operational sites and at our reservoirs to make them compliant with Dark Sky Accreditation, reducing light pollution as we improve energy efficiency. This builds on our experience at Kielder Water & Forest Park, the third largest Dark Sky Reserve in the world, and our role in securing this status and agreeing the Dark Sky protocol.

## **3.5 Improving the environment** continued

### Outcome 12 continued

#### Cutting waste

Reducing waste and increasing the amount we reuse or recycle is central to good stewardship of natural capital, and is linked to our ambitious goal for sustainable use of natural resources. Our approach to cutting waste has three aspects:

- Reducing the waste we produce, particularly the use of products that are difficult to recycle;
- Making sure that where possible the waste we produce is recovered for beneficial use in line with circular economy principles, or is recycled; and
- Managing our purchases so that where practical we use products that incorporate high levels of recycled content, rather than virgin materials.

#### Ofwat IAP test areas

-  Engaging customers
-  Delivering outcomes for customers

**90%**

by 2025 we will ensure 90% of the materials we procure have high levels of recycled content

### A scheme to drive water improvements for all

Through our Improving the Water Environment Scheme, we will improve accessible areas of water environment including at parks, picnic sites, well-used footpaths and areas that are used for water sports. This will make a real difference to our customers' lives.

**Packages of jointly funded improvements will cover a range of activities relating to improved access, facilities, wildlife and water quality, agreed with partners in consultation with customers, and overseen by an external governance group.**

Examples of projects include:

- Durham Peninsula: enhancing the footpath alongside the river in Durham City, a popular destination that is visited by over 4m visitors each year. Improvements needed include upgrading the riverside walk with new footpaths, interpretation boards and art work; better facilities for using the riverside including more litter bins, a café kiosk and toilets; and greening up of the heavily modified riverbanks, through floating islands;

- Great Ayton: This village located on the River Leven close to the Cleveland hills receives around 200,000 visitors each year, and has around 600m of river frontage. Improvements needed include extending river paths to improve access and extend the Leven Cycleway; creating sustainable drainage schemes upstream and adjacent to the river to reduce risk of flooding to the village, which could also be used for recreation and wildlife sites; and improved fish passage on the six weirs through the village; and
- Derwent Reservoir: Located on the border between County Durham and Northumberland, this site receives around 200,000 visitors per year, and has 11km of perimeter. Improvements needed include a multi-user path linking the visitor centre to the dam wall; and creating a large 'bug hotel' and associated visitor interpretation.

**“ This is a truly innovative step for our future; locally sourced and controlled environment funding to invigorate existing partnerships and inspire new ones to secure outstanding improvements for the water environment. ”**

**Niall Benson**  
Heritage Coast

Our ambition to achieve zero avoidable waste by 2025 will mean eliminating, re-using or recycling 90% of waste from our operations. To reach this goal, we will make sure that all wastes that we produce are monitored and measured accurately. We will also set targets to reduce waste.

We classify our waste into seven groups: sewage sludge; water sludge; bin waste; grit and screenings; aggregates; waste electrical; and hazardous waste. We will work with the sustainability experts WRAP to review this categorisation, and by 2020 we will set suitable time-bound targets to achieve for each of the differing classes of waste. We will also work with partners to develop opportunities for working with the circular economy in our regions.

When waste has a use it often ceases to be a waste. For example, treated wastewater effluent can be beneficially returned to the environment, and sludge produced through water and wastewater treatment can be recycled to land after it is processed to meet environmental standards.

## 3.5 Improving the environment continued

### Outcome 12 continued

Our wastewater sludge is used for renewable energy generation, and is itself a resource. We lead the industry in this area, being the most efficient by a significant margin, as we already recycle all of our sludge waste. We use it to generate energy and residual material is recycled to land as an alternative to fertiliser. We intend to build on our industry leading position and to create further value for money and efficiencies for our customers while enhancing and protecting the environment by trading with our neighbouring water and sewerage companies where capacity exists (see Section 6.1).

With respect to the procurement of new goods and materials, we will work within our Responsible Procurement strategy to make sure that everything we buy is clearly sourced, monitored and measured accurately. By 2025, we will make sure that 90% of the materials we procure have high levels of recycled content.

**A** See Appendix 1.2

The water industry uses a lot of plastic in delivering services to customers. Most of this is in the form of polyethylene pipe that delivers water to homes and businesses and allows the removal of sewage for treatment. We will carry out a review of all plastic use within the business to demonstrate that the use of such material is justified. In particular, we will work to eliminate the use of single use plastic, setting a backstop date to eliminate it by 2023. We will also continue to engage the public in minimising single use plastic through our involvement in the Refill campaign.

Microplastics are also of growing environmental concern to the water industry in relation to our treatment processes. We are an active player in this area through investment in joint research projects through UKWIR and with other research partners. As environmental understanding and definitions and regulatory wastewater treatment targets change into the future, we want to be at the forefront of the effort to ensure that the risks from microplastics are minimised.

#### Ofwat IAP test areas

- EC** Engaging customers
- OC** Delivering outcomes for customers

**“**  
**We propose a PC level of 23,898 tonnes of carbon emitted annually by 2024/25, decreasing from 28,575 tonnes in 2020/21.**

**“**  
**We will work to eliminate the use of single use plastic, setting a backstop date to eliminate by 2023.**

### Our Environment Strategy

We will publish our Environment Strategy in 2019. It will incorporate our plans for the wider environment, and further develop our objectives to achieve net gain for biodiversity, to enhance the water environment, and to aim for a positive impact on the environment from our operational activities.

This strategy will set out in more detail how we will go above and beyond our regulatory obligations to protect and improve the environment in everything we do.

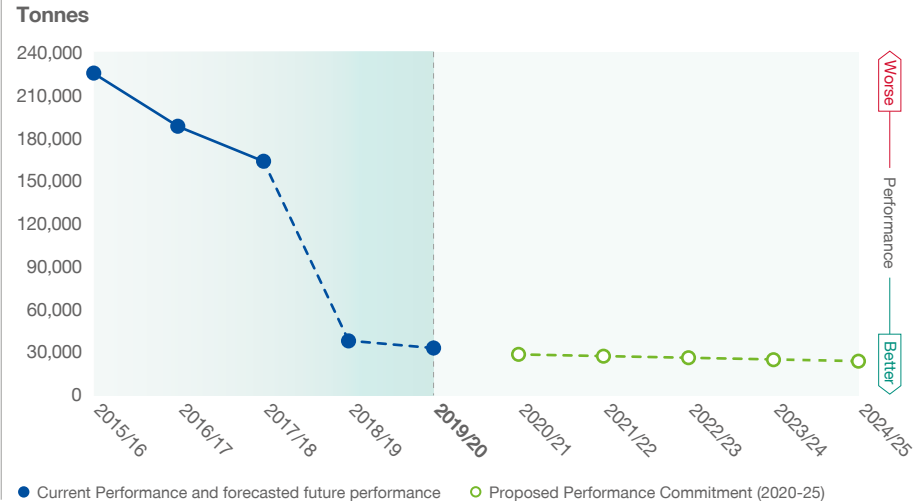
The strategy will also set out the leadership and governance arrangements we will put in place for reporting on our progress in delivering against our targets.

### Our performance commitments

#### Greenhouse gas emissions

Our bespoke measure for greenhouse gas emissions is tonnes of carbon emitted per year. We propose a PC level of 23,898 tonnes of carbon emitted annually by 2024/25, decreasing from 28,575 tonnes in 2020/21. This represents a challenging though achievable pathway towards our ambitious goal of being operationally carbon neutral by 2027.

#### GREENHOUSE GAS EMISSIONS





## 3.5 Improving the environment continued

### Outcome 12 continued

#### Bioresources

Our bespoke measure for bioresources is the percentage of sewage sludge treated by advanced anaerobic digestion (AAD) and beneficially recycled to land.

Although our ambition is to continue to perform at 100%, which is industry leading by a substantial margin, our PC level for 2020-25 is set at 98%. This is in part in recognition of the potential for access to land to be constrained by certain events (as happened, for example, in 2001 with the outbreak of Foot and Mouth disease).

We propose a PC of 100% for 2030 onwards, recognising the opportunity for biosolids trading linked to our bioresources strategy and opportunities within our Integrated Approach.

#### Water environment improvements

Our bespoke measure for water environment improvements is 'length of accessible water environment improved in partnership for the benefit of customers and communities'. This PC is by its very nature stretching as it goes above and beyond our statutory commitments, regulatory obligations and our business as usual activities. It will demonstrate water environment leadership and help us achieve our ambitious goal to have the best rivers and beaches in the country.

#### Ofwat IAP test areas

- EC** Engaging customers
- OC** Delivering outcomes for customers

To deliver improvements, we will work with our partners to enhance aspects of access, facilities and recreation, water quality, and wildlife and biodiversity at targeted sites across the water environment. The water environment includes rivers, streams, lakes, reservoirs, wetlands, coasts and beaches.

We have set up a new partnership scheme 'Improving the Water Environment' to ensure we can work together with others towards this measure for the benefit of customers and communities within our regions.

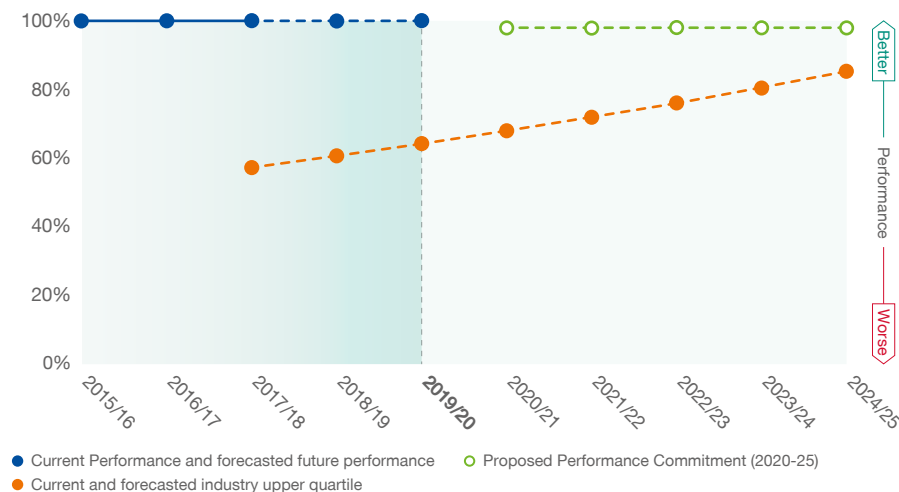
We have worked with the Water Forum to consider how this approach will be externally assured and improvements delivered through working with others, and we will set up a Water Environment Governance Group (WEGG) of influential external stakeholders representing different sectors including customers and with specific expertise to oversee the scheme, drive on-the-ground delivery, and support this approach.

We will use this measure to ensure that our customers derive real benefit from the environmental improvements we can achieve and influence in our regions. When we asked our customers about river and coastal water quality (Bathing Water Quality, 2015; River Water Quality, 2016), we were told that the improvements they want to see go beyond just water quality to cover wider aspects such as litter, wildlife, access and facilities, and they want us to work with others to enhance the water environment. Linking our improvements under this measure to accessible areas including popular riverside footpaths, parks, beaches, and reservoirs will allow improvements to be visible and enhance our customers' experience of engaging with the water environment.

Through our service valuation research, we know that our customers strongly support investment in the water environment, with this service area being the second most preferred option for service level improvements, for which our customers said they would be willing to pay for a very high level of improvement.

#### BIORESOURCES

Percentage of the total amount of sludge produced treated by AAD and recycled to land in a financial year



**Our ambition is to continue to treat 100% of our sewage sludge by advanced anaerobic digestion (AAD).**

**750km**  
water environment improved by 2045

## 3.5 Improving the environment continued

### Outcome 12 continued

We will engage with our customers to ensure that the approach we are taking by working with others towards improving the water environment and the improvements to be delivered through the scheme address their needs and meet their expectations.

These proposed water environment improvements go above and beyond, requiring: investment beyond our core activities; aligning of match funding through a variety of approaches; and a new way of working together with our partners to deliver and measure improvements on the ground across multiple aspects. These challenges need to be reflected in an appropriate performance commitment target for water environment improvements.

In order to set our PC level, we discussed the costs of delivering improvements to facilities, access and recreation, water quality, and wildlife and habitats with partners within our regions. We also took advice from the Water Forum. Given our commitment to invest £500K in the new scheme in 2020, we assume if we were to invest £10000 per km in above and beyond improvements then we could achieve 50km of improvements from 2020-25.

We therefore propose to set a PC level of 50km of water environment improvements by 2025. This could be equivalent to enhancing a number of improvements to access, facilities and recreation, water quality, and wildlife and biodiversity at ten public or country parks or beaches across our regions, each with 1km of water access.

This is however a very stretching target, as we anticipate that in order to deliver the improvements our customers want to see across multiple aspects, costs per km are likely to exceed the investment we have allowed, requiring focus on aligning and augmenting funding. Our ambition is to deliver a much greater number of improvements if the approach proves to be successful, so that we can use reward to reinvest in the scheme once we have recouped our upfront business costs.

We will review progress and success in delivering water environment improvements throughout AMP7 and revise our targets for 2025-30 and beyond as appropriate.

 See Appendix 4.1

The guidance for recording improvements against this PC is provided in an Appendix to our IAP response.

#### Ofwat IAP test areas

-  Engaging customers
-  Delivering outcomes for customers



# Building successful economies in our regions

“ We are impressed by the work that the company does to support its local communities, and partnership is clearly of key importance to the business. We are pleased that this theme features in the Business Plan – although it is not one of the four Ofwat PR19 themes, customers deem this work an important part of water company life, as their feedback demonstrates. ”


**The Water Forums**



## A lasting legacy for communities

“ This is my playground and I want to protect it for the future. ”

Nick Atkinson loves his local community – particularly Jesmond Dene in Newcastle where he spends much of his time with daughter Grace. Nick believes that by looking after the environment he contributes to the well-being of the community, and by joining our bank of volunteer Water Rangers his family are providing valuable support. Water Rangers are our eyes and ears in the community, alerting us to any issues with our outfalls and discharges into rivers and the sea. Water Rangers not only help protect the water environment, but through them we can also engage better with our communities around water.

 [Click here to view Nick's story, or scan the page in your Zappar app.](#)



# 3.6

## Building successful economies in our regions



Our building successful economies in our regions theme has two outcomes:

- We are proud to support our communities by giving time and resources to their important causes; and
- We work in partnership with companies and organisations to achieve the goals that are most important to our customers.

Our ambitious goals for building successful economies in our regions are to:

- Spend at least 60p in every £1 with suppliers in our regions; and
- Be the most socially responsible water company.

Ofwat IAP test areas

- EC** Engaging customers
- OC** Delivering outcomes for customers

**£3bn**

we will spend and invest more than £3bn in providing water and wastewater services in 2020-25

### Theme overview

**As a responsible business with a strong track record, it is important to us that we demonstrate leadership and make a wider contribution to life within our regions.**

We proactively take leadership positions to make a significant contribution to the economic wellbeing of the customers and communities we serve.

From 2020-25, we will spend and invest more than £3bn in providing water and wastewater services. We own assets worth many billions of pounds, employ more than 3,000 people, and have a network of more than 2,000 supply chain partners, many of whom are based in our regions. Our activities have a 'ripple effect', going far beyond our direct investment through trade with local suppliers to benefit our regional economies.

Through supporting our customers' communities and helping facilitate their success, we can strengthen our relationships with them, which in turn supports their participation in shaping our activities.

Partnership working within our regions is an essential aspect of our approach. By working in partnership with others to deliver common objectives, we can deliver efficiencies and multiple benefits, and support others to achieve their goals too.

The innovations in this area that will deliver the difference for our customers are:

- Tailored support for our local suppliers on how to contract with us, delivered on their doorsteps via Flo, our community engagement vehicle;
- Intergenerational participation supported by our new Customer and Communities Collaboration Lead to support our #wearefamily community engagement approach;
- At least 50% of our employees volunteering through our Just an hour scheme, donating time and expertise to support our communities; and
- A shared ambition for brilliant partnership working within our regions, through the award-winning NIDP and the CaBA to support delivery of our outcomes.

## 3.6 Building successful economies in our regions continued

### Outcome 13

We are proud to support our communities by giving time and resources to their important causes.

#### Why this outcome is important

We are an integral part of the communities in which we operate. The health of our customers, their economic prosperity, and the surrounding environment all depend on how we deliver our services. Our reach into communities is extensive, and we benefit from being one of the few organisations to have a relationship with all of the households and businesses in our operating areas. We take this responsibility seriously, and our customers agree that we are an important part of the community. Our activities in our communities are also an important aspect of maintaining trust.

We have worked hard to develop strong relationships with the diverse communities that we serve, and will build on this during 2020-25. Our support for communities contributes to making the areas we serve better places in which to live, work and invest.

We also reinvest at least 1% of our pre-tax profits into our communities through dedicating expertise, employee time, money and facilities. This includes the contributions employees make through our highly successful employee volunteering scheme, Just an hour.

#### How our customers' views have shaped the plan

Our customers agree that we are an important part of the community. This is reflected in our tracking research, where customers score us 8.9 out of 10 for being an important part of the community. Customers also told us, when we were talking to them about what makes excellent customer service, that we should promote our great work locally. This includes activities such as school engagement, environmental projects and charity work (Unrivalled Customer Engagement Strategy, 2015).

In our 2018 consultation on our draft Assurance Plan, 94% of our customers told us it was important to them that we spend money with local suppliers.

#### Ofwat IAP test areas

-  Engaging customers
-  Delivering outcomes for customers

## 8.9/10

our customers score us 8.9 out of 10 for being an important part of the community

## 94%

of our customers told us it was important to them that we spend money with local suppliers

## 1%

of our pre-tax profits into our communities

#### What our plan will deliver for customers

In order to meet our ambitious goal to be the most socially responsible water company, we will measure our activity as a responsible business across all areas of our operations: our people, customers, suppliers, finances, partnerships, communities and environment, and will achieve a leading position in recognised benchmarks.

Our community work supports this, and has five main strands:

- Supporting communities through our employees;
- Developing collaborative communities for water management;
- Supporting communities through local spend and our work with supply chain organisations;
- Supporting communities through project legacy; and
- Supporting communities through local leadership.

We have a series of award-winning community campaigns and initiatives, which include Every Drop Counts, Love Your Drain, Rainwise and Water Rangers. We plan to further extend and integrate this activity in 2020-25. We will do so by using collaboration to build and strengthen our communities, co-creating new programmes with our customers for them to participate in, so that we can tackle the issues they care about together.

#### Supporting communities through our employees

We know our communities can benefit from the wealth of knowledge, skills and expertise our employees have to give. Similarly, our employees benefit through engagement with community causes, and the feelings of enjoyment, wellbeing and achievement that sharing their expertise and 'giving something back' to communities can provide.

Our well-established employee volunteering programme, Just an hour, allows employees to contribute to communities in whichever ways they like, for example by helping to make environmental improvements or by supporting local groups. Much of this takes place during business time, although many employees also use their skills and expertise in their own time to support the causes that are important to them. Since the launch of the scheme in 2002, our employees have given more than 100,000 hours to the communities we serve.

## 3.6 Building successful economies in our regions continued

### Outcome 13 continued

We will continue to target a minimum of 50% of our employees taking part in volunteering or fundraising activity. This is at a leading level when compared with other schemes.

For 2020-25, however, we will focus on even higher quality and more meaningful engagement. In line with our collaborative communities' ambition we will ensure that at least 10% of our Just an hour activity focuses on strengthening our relationships with customers, particularly those who may need additional help and support. A further 5% will focus on working with schoolchildren – our future customers – through the NWG Academy, helping children and young adults to develop the skills they need to take up future opportunities in the water sector.

We also support our employees to help organisations that are close to their hearts through our sponsorship scheme 'Cheque It Out'. Employees can apply for small value financial grants to give to charities of their choice.

### Developing collaborative communities for water management

We want to play an active role in supporting our communities. To do so, we need to understand our communities' needs and aspirations, so that we can develop joint ambitions and promote and support participation in our activities.

Our ambition is to develop 'collaborative communities' within our regions, bringing together customers with community-level organisations and other partners. These collaborative communities will allow us to combine skills and expertise, share understanding, and co-create cost-effective, sustainable solutions and action plans.

We understand that communities encompass both traditional local communities and communities with common interests, and we will use digital channels and social media wherever possible to support our work.

To measure the success of our collaborative communities approach, we will undertake baseline research into customer awareness and participation in our programmes and initiatives, including water saving activities, priority service registers, and Water Rangers. By developing collaborative communities, we plan to increase awareness of our programmes by 50%, allow 2m customers to get involved in our activities, and achieve a world class NPS.

#### Ofwat IAP test areas

-  Engaging customers
-  Delivering outcomes for customers

## 2m

we will give every single customer the opportunity to have a strong voice and engage with us, with 2m customers involved by 2025

## 50%

we will continue to target a minimum of 50% of our employees taking part in volunteering or fundraising activity

### Integrated delivery of our campaigns and initiatives

We have an aspiration for community-level water management, starting with integrated delivery of our campaigns and initiatives, Every Drop Counts, Love Your Drain, Rainwise, Water Rangers and Water without the Worry.

We plan to further develop our innovative 'whole town approach' (see Outcome 2), applying the principles of our Integrated Approach to coordinate and join up these campaigns. This will allow us to share and deliver messages more efficiently as a business, help us engage with communities around water management, and support our collaborative communities ambition.

### Customer and Communities Collaboration Lead

Underpinning these activities is our ambitious goal to give every single customer the opportunity to have a strong voice and engage with us, with at least 2m customers participating by 2025. To make this happen we will appoint a Customer and Communities Collaboration Lead who will coordinate our efforts to develop a fuller understanding of the needs and aspirations of particular communities, and help make the best use of time and money.

The key actions we will take are:

- To create and launch our #wearefamily events, community gatherings of every generation across different locations;
- To develop effective community-level partnerships by recruiting and supporting community champions;
- To develop a 'community toolkit' of the full range of activities and support that we have to offer to support community-based engagement schemes; and
- To prioritise our community activity to help address multiple business risks for the benefit of our customers. To do so we will use approaches such as our Waterbody Integration Tool, which helps us understand where operational issues such as water quality, water scarcity, sewer flooding, and pollution coincide. The tool brings together and maps information about waterbodies (sub-catchments of surface waters) drawn from across the business, helping us identify and target opportunities to work with others in ways that are beneficial.

## 3.6 Building successful economies in our regions continued

### Outcome 13 continued

#### Live well locally

In March 2017, Defra issued a comprehensive evidence statement on the links between natural environments and human health. Defra cited that 'living in greener environments is associated with reduced mortality and reduced health inequalities'. The report also said 'there is strong and consistent evidence for mental health and wellbeing benefits arising from exposure to natural environments'.

As a business with strong connectivity to our customers, communities and local environments we believe that we have a part to play in bringing people closer to their environments to promote better health for individuals and communities.

Our 'Live well locally' initiative aims to actively engage our customers in experiencing and caring for their local environments. For example, our Water Rangers initiative recruits customers to volunteer in their local communities, undertaking training so that they can identify and report potential hazards to local river courses while enjoying walks around their local areas. Our Rainwise programme visits customers in their communities to share information about positive changes they can make in their gardens and public spaces to prevent flooding and enhance their local environment.

#### #wearefamily

By 2025, we will be serving five different generations. Through our new intergenerational participation initiative, #wearefamily, we will work with our partners at community level to bring different generations together. In this way people of all ages will be able to shape our services and the future direction of the business. Through this initiative we will test out innovative approaches, and encourage behaviour change through links to our campaigns and initiatives.

We will work with each generation to forecast their future needs and goals. We will integrate this insight with trend forecasting information from leading agencies so that we can be proactive in designing our services to meet the needs of our changing communities. Our aim is to hold six multigenerational gatherings a year, at locations across our regions, coordinated by our Customer and Community Collaboration Lead.

#### Ofwat IAP test areas

-  Engaging customers
-  Delivering outcomes for customers

#### #wearefamily initiative

we will work with our partners at community level to bring different generations together

# 1,000

we plan to grow the Water Rangers team to 1,000 and to expand

### Public patrol from our invaluable Water Rangers

**The Water Rangers scheme is a unique and award-winning initiative to protect the water environment that relies on the commitment and community pride of a team of dedicated volunteers. Water Rangers are our eyes and ears along rivers and beaches, regularly checking the areas that are more prone to pollution, and reporting back incidents so we can respond swiftly.**

Water Rangers also report issues outside of our responsibility, such as fly tipping, fallen trees, abandoned shopping trolleys, missing life belts, and invasive non-native species, so we can pass on this information to our partners.

Water Rangers love what they do, and often ask how they can do more to support the environment for the benefit of their community.

Since it was launched in 2014, the Water Rangers team has grown to more than 60 members, monitoring over 50 routes across the North East of England. Our ambition for Water Rangers is big – we plan to grow the Water Rangers team to 1,000, to expand their remit, and work with our partners to derive more benefits, linked to our ambition to develop collaborative communities within our regions.

### Supporting communities through local spend and our work with supply chain organisations

We spend more than £400m a year in procuring goods and services.

Our investment has a 'ripple' effect to the economy in our regions; the Local Multiplier 3 estimates that the value of spend in the local economy is up to twice the original spend, resulting in significant benefits for our communities.

We currently spend 52p in every £1 with suppliers that have a postcode in our operating areas. Utility regulation restricts the basis on which we identify suppliers, effectively preventing us from selecting solely on location.

However, in order to achieve our ambitious goal for local spend we will continue to strengthen our responsible procurement activities, recognising the value of our suppliers in providing apprenticeships, work experience and training and their impact on the environment. We will in particular increase our spending through SMEs.

This, together with more detailed understanding of where money is spent, will allow us to increase the figure from 52p to at least 60p in £1.

Our Responsible Procurement Programme (see Outcome 3) sets the framework for this commitment.



## 3.6 Building successful economies in our regions

continued

### Outcome 13 continued

Our Suppliers' Sustainability Charter makes sure we work with our suppliers to improve our sustainable performance and reduce the adverse impacts of our activities.

To help us create an environment where our suppliers feel valued and are driven to deliver outstanding service, we have created our Going the Extra Mile (GEM) awards. The awards promote, highlight and celebrate the crucial role suppliers play in the success of our business.

We have found new ways to help smaller suppliers engage with us to further develop relationships with regional companies which will help towards boosting economic growth, jobs and prosperity in our operating areas. Our tailored approach includes using Flo, our engagement vehicle to take our procurement team to the heart of the business community, meet with firms interested in working with us and answer their questions about our tender processes.

#### Ofwat IAP test areas



Engaging customers



Delivering outcomes for customers

**£250m**

we invest c£250m annually in capital projects

### Working with schoolchildren to leave a lasting legacy

We recognise the impact of our activities on our communities and aim to leave a positive legacy through our water and wastewater projects.



**On the South Tyne Trail in Northumberland, we needed to install a new water main and marker posts. We worked with the community to consider how we could soften the impact of this work in an area of outstanding natural beauty (AONB).**

A series of striking sculptures were used to replace 16 concrete posts, designed by school pupils, inspired by local landmarks and wildlife, and crafted by a local blacksmith.

Katherine Ayre from Whitfield Church of England Primary said "I am delighted our pupils have had the chance to work on this project that will enhance our community and become a source of pride for them and their families for generations."

### Supporting communities through project legacy

Each year we invest around £250m in capital projects. This investment impacts on our communities, and our ambition is to make sure that every project leaves a positive legacy.

We consider project legacy in four often interdependent components:

- Built environment – buildings, structures and landscaping, examples include kiosk designs and sculpture trails;
- Natural environment – landform, habitat and wildlife, linked to our biodiversity aims and our Improving the Water Environment scheme;
- Relationships – with communities, stakeholders, partners and users of our assets; and
- Learning – sharing of expertise and best practice for future projects, promoted through our shared Engineering Knowledge Centre. This is a Microsoft Sharepoint-based portal to facilitate assurance and accessibility of engineering standards and technical learning points to enhance asset management capability.





## 3.6 Building successful economies in our regions

continued

### Outcome 13 continued

We will be proactive and systematic in identifying opportunities to develop project legacy within our communities. In time, good legacy outcomes will be seen as essential project deliverables, alongside function and value for money.

We have the support of our supply chain partners to leave a positive legacy. We will work together to co-create legacy ideas, including for example through our supply partner conferences. Our shared objective with our delivery partners that 'we respect our communities, leaving a positive legacy' is included in our Framework Charter, which is signed by all of our Run2 partners.

#### Supporting communities through local leadership

We are committed members of organisations that care about the local economic and social infrastructure. We support and take leadership roles in a number of key business and trade bodies within our regions and nationally, including Chambers of Commerce, CBI, the Confederation of Small Businesses, and Business in the Community. We use our convening power and our business networks to influence significant areas of strategy and policy that impact on our regional economies.

For example, our CEO, Heidi Mottram brought together the CBI, the North East Chambers of Commerce and other business organisations to draw up a list of transport priorities for the North East of England. As a result of Heidi's leadership, businesses were able to articulate clear transport needs to the Government, with the outcome that all of the transport investment projects listed have now been delivered.

As Vice Chair of the Board of the North East LEP, Heidi plays a key strategic leadership role for the LEP and for the region. The Board of the LEP provides high-quality leadership in setting the strategic direction for the sustainable economic growth of the North East economy, determining key objectives and investment priorities to deliver the region's overall vision and economic strategy. Heidi's role also allows us to play our part in raising the profile of the North East within Government and championing the business message on behalf of the region.

We are key players in driving economic growth in our regions by making sure that the infrastructure is in place to support the growing population and encourage investment in the region.

In our NW operating area we established Infrastructure North, which is made up of ourselves, Northern Gas Networks, Northern Powergrid and Yorkshire Water. By bringing together the major utilities in our northern operating area, we are better able to coordinate our support for customers, our responses to planned and emergency operations, and our collective impact on infrastructure investment in our region.

In our ESW operating area we are active members of the local Chambers of Commerce, hosting several events each year to support the local business community on initiatives such as saving water, employee health and wellbeing, skills and personal development. We work closely on local economic development with the New Anglia LEP, an organisation that actively participates in the Water Forums. Rural and agricultural matters are of particular interest to our customers and business operations in our ESW operating area and several senior managers represent our business on a number of important local forums such as the Rural Community Council of Essex.

#### Ofwat IAP test areas

- Engaging customers
- Delivering outcomes for customers

### Transforming the lives of individuals through social enterprise

**The Skill Mill is a not-for-profit social enterprise providing employment opportunities in environmental management for young offenders who have successfully completed rehabilitation.**

We play a key role in the Skill Mill project in Newcastle, together with Newcastle City Council, the EA, the Youth Justice Board, Northumbria University and East Durham College.

Each young employee receives six months' paid employment, practical real-world work experience, and opportunities for progression with local companies. The Skill Mill transforms the lives of individuals and brings sustainable low-cost environmental benefits to communities.

The Skill Mill model in Newcastle has been used to set up another North East scheme in Durham which we also support, and schemes in Leeds, Liverpool and North Yorkshire.

Around 40 young people have already been engaged in the programme. We are supporting wider national development through our supply chain and the water industry, and promoting links between the Skill Mill and work in catchments with our environmental partners.

## **3.6 Building successful economies in our regions** continued

### Outcome 14

We work in partnership with companies and organisations to achieve the goals that are most important to our customers.

#### Why this outcome is important

Partnership working is an essential aspect of our approach as a water and wastewater provider.

By working in partnership with other stakeholders, we are able to share the costs, risks and benefits of addressing the challenges and opportunities faced by our business, and together make a difference to our customers' lives.

#### How our customers' views have shaped the plan

We have evidence from our customers that they welcome and support us working in partnership. For example, customers expect us to work with other organisations in our flood prevention work (Flooding Response, 2017), to work with others to improve the environment (River Water Quality, 2016), and to connect our customers with partners who could offer them

financial and non-financial support where appropriate (Conversations with vulnerable customers, 2016).

Our customers often suggest that we work with schools, and are pleased to hear we promote behaviour change through engagement activities with children, for example to prevent blockages (CSOs, 2016; Flooding Response, 2016) or to improve river water quality (River Water Quality, 2016). They also support this approach to encouraging water saving (Metering, Supply and Demand, 2017).

Our customers' views and support have helped shape our ambition to undertake brilliant partnership working across all of our business activities.

#### Ofwat IAP test areas

- EC Engaging customers
- OC Delivering outcomes for customers

## £1m

we invest more than £1m in direct financial contributions each year to support partnerships

#### What our plan will deliver for customers

Our partnership strategy sets out how we work with those whose values align with ours to achieve the shared goals that are important to our customers. Our partnerships are governed through joint steering groups, codes of practice and charters. We are a trusted partner of local, national and global strategic partnerships, influencing water policy and regulation to be progressive and sustainable.

Partnerships that have been recognised as leading, and are used as exemplars of collaboration best practice, include our award-winning NIDP and our Chelmer and Blackwater Partnership.

In addition to our in-kind support, we invest more than £1m in direct financial contributions each year to support these partnerships. This investment leverages at least five times more into partnership activities for the benefit of our customers and communities. For 2020-25, we will maintain this investment and seek to maximise the leveraged resources our investment attracts.

One of the principles within our Integrated Approach is to seek opportunities to work with others to deliver multiple benefits.

Our ambition is to undertake brilliant partnership working across all of our business areas in order to deliver the outcomes that are important for customers. This ambition was developed with more than 90 partners in our regions through our Thinking Ahead workshops.

During 2020-25, we will build on our excellent foundations, supporting and developing existing partnerships and creating new ones where beneficial for customers, communities and the environment.

Our activity covers three areas:

- Community partnerships;
- Enabling partnerships; and
- Environmental partnerships.

## **3.6 Building successful economies in our regions** continued

### Outcome 14 continued

#### Community partnerships

We have a number of key flagship partners who work with us creatively to support our communities and meet our customers' priorities:

- **StepChange and NEA:** We work with both of these partners to provide support for customers who need additional help or are struggling to pay their bills. These partnerships will be key in helping us to deliver our ambitious goal to eradicate water poverty in our regions.

**78** More detailed information about our shared ambitions and delivery plans is included in Section 3.2

- **City to Sea:** Through the 'Refill' initiative we are encouraging people to fill their bottles with tap water at public Refill 'stations' rather than buying single use plastic bottles. The partnership links with our ambitious goal to promote confidence in our drinking water so that nine out of ten of our customers choose tap water over bottled water. We have recruited around 700 businesses in our operating areas as Refill stations to date and, by working with our business networks and partners, will increase this to 1,500 by 2020; and

- **WaterAid:** Our chosen international charity partner, WaterAid improves access to safe water, sanitation and hygiene in 37 countries. Since we helped to establish WaterAid in 1981, more than £5m has been raised through our employee fundraising committee and support from our customers and partners. We are well on the way to meeting our commitment to raise a further £1m for Madagascar by 2020.

In addition to our flagship partnerships, we provide grassroots support to many other partners each year.

#### Enabling partnerships

##### Economic partnerships

We take an active leadership role in local and national business organisations and are represented on a wide variety of leadership groups that serve to give business a voice in strategic and policy matters. We frequently lead groups where local authorities and other public or charitable sector organisations are seeking to engage with businesses. For example, last year our CEO chaired a Waste Commission on behalf of Newcastle City Council to develop a city-wide waste strategy.

#### Ofwat IAP test areas

- EC** Engaging customers
- OC** Delivering outcomes for customers

#### Delivery partnerships

We have strong, well-established relationships with our supply chain partners to make sure that our capital projects are delivered efficiently.

We have a successful collaborative delivery model for investment schemes in place. Our long-term framework contracts (typically up to ten years) give forward visibility of workloads so that our partners can plan ahead and invest in people, assets and the local community.

These partnerships ensure that we have the necessary skills, experience and capacity over the long term so that our services remain resilient in the face of increased competition for skills and resources, and changes in technology and working practices.

We want to further strengthen sustainable relationships with our supply chain and aim to be the first water company to achieve accreditation to ISO 44001 for collaborative business relationships with our key delivery partners by 2020.

We work with all of our framework partners on a jointly developed continuous improvement plan.

Our Framework Charter sets out our aims and the values by which we all work. A Framework Governance Group comprising directors and senior managers provides oversight to all of our frameworks. We share best practice through cross-framework forums focusing on Health and Safety, Customer Service and Working Smarter. Day-to-day performance and improvement activities are overseen by an Integrated Leadership Team reporting to the Joint Framework Governance Group, which is chaired by our Assets and Assurance Director.

We support collaborative working in our supply chain through our Asset Investment Hub, a shared working space and shared brand: Run2.

The Asset Investment Hub houses around 200 highly skilled employees from NWL and framework partners Esh-MWH, MMB, Interserve, Turner & Townsend and Wood Group. The hub enables teams to work together under one roof, sharing best practice, and designing and delivering joint programmes in areas such as health and wellbeing, innovation and skills and training.



## 3.6 Building successful economies in our regions continued

### Outcome 14 continued

Our new operating model has been recognised through awards in the Safety and Client of the Year categories at the 2017 Construction Excellence Awards, against national competition from the entire construction sector. This approach has delivered significant efficiencies.

**241** See Section 7 for more information

A number of commitments have been made by each supplier to increase social value across our frameworks in response to our Responsible Procurement programme.

**75** See Outcome 4

Together, Run2 partners within framework partnerships set up the Run2 Academy, a collaborative initiative providing unique opportunities for summer and undergraduate placements tailored to individual students. Students benefit by gaining valuable skills and practical experience while undertaking a variety of roles working for different companies. The initiative is helping to address the skills shortage, and will expand over time to leave a lasting legacy for the region.

#### Ofwat IAP test areas



Engaging customers



Delivering outcomes for customers

Through the Run2 Academy, partners work towards a collaborative set of community targets. The Run2 Academy won the people development award at the Constructing Excellence in the North East Awards 2018.

Since October 2015, through the Run2 Academy, our supply partners have:

- Employed 32 young people through apprenticeships or as trainees and graduates;
- Created a shared summer placement programme for seven students;
- Provided more than 100 weeks of work experience placements;
- Enabled more than 300 local students to visit our construction sites;
- Engaged with 14 primary schools through STEM water kits; and
- Involved more than 2,500 students in the Building My Skills programme.

In addition, Run2 Academy members have developed relationships with schools and universities to attract talent and promote career opportunities within the water industry.

We will expand the range of programmes offered by the Run2 Academy to include work experience placements for Year 11 students, and apprenticeships and work experience placements for groups of young people who are not in employment, education or training.

#### Research and innovation partnerships

Our research and innovation partnerships cover engagement with local education partners, academic partners, leading technology companies and other SMEs, as well as our support for local strategic and enabling groups.

- We will support the STEM agenda in line with our local education partners' expectations, ensuring a pipeline of appropriate skills for the future;
- We will engage with our academic partners in world-leading research, creating a knowledge base to support the whole sector into the future; and
- We will give our SME partners the opportunity to engage over real problems and help develop marketable solutions.

We are fortunate to have some great innovation partners within our regions in the form of universities, leading technology companies and others who are pioneers in their respective industries.

**134** See Section 3.4

Strategic research and innovation partnerships give these organisations unique access to our operations and the types of problems that we face. In return, these partnerships provide us with early sight of their latest thinking and product developments.

We will continue to nurture our partnerships as part of our innovation culture, providing them with access to physical and digital facilities and advancing our knowledge around the science and engineering of water management through research, experimentation and by demonstrating new technologies and practices.



## 3.6 Building successful economies in our regions continued

### Outcome 14 continued

We have already developed some successful key partnerships around innovation, including with:

- **IBM** – we will draw on IBM’s leadership in the fast-moving technology industry and expertise in artificial intelligence, cognitive computing, cloud, cybersecurity and other areas of strategic interest;
- **O2** – we have jointly invested in an innovation fund to explore how we can make use of new devices, leading-edge communication protocols and emerging services, including autonomous vehicles; and
- **Hedgehog Labs** – this locally based but global technology consultancy concentrates on building apps for smartphones and other connected devices. It will play a key role in helping us achieve transformations in digital experience for our customers and employees.

We have two strategic research partners in our NW operating area:

- **Durham University** – in addition to our work with the Water Hub, we will together focus on key areas where we already have an established relationship: asset management and resilience, catchment systems, biology, business and innovation; and
- **Newcastle University** – we will work with specialist centres to focus on areas as diverse as advanced microbiology, green infrastructure, the circular economy, data science and health and wellbeing. Newcastle University will be a key partner in our work on the digital twin, Innovation Street, and our Workforce 2025 strategy.

At a strategic level, we are a headline partner in the North East Innovation Supernetwork. This works to stimulate collaborative innovation and business growth by providing a platform for open innovation. It also brokers finance for start-ups and growth-ready SMEs.

We are a member of the Energy and Utility Skills Partnership, which is tackling future skills shortages and will help us attract some of the 221,000 new recruits that will be needed by the industry by 2027.

#### Ofwat IAP test areas

- EC** Engaging customers
- OC** Delivering outcomes for customers

We recognise the need to invest in new capabilities that will enable our engagement around innovation to be more accessible and meaningful. Between 2020 and 2025, we will work to:

- Develop greater transparency around our challenges;
- Create low entry barrier collaboration projects;
- Create shared data environments;
- Establish ‘safe’ physical and digital environments for experimentation and testing;
- Make available facilities for prototyping and demonstrating innovative products and services (including Living Zones and digital twins); and
- Secure support for funding rounds.

Developing these capabilities will enable our partnerships to rapidly refine and roll out solutions to water management issues.

### Creating new opportunities for businesses and communities

**With our partners Durham University, the EA and Durham County Council, we use our expertise and networks to shape opportunities, grow ideas, test products and deliver solutions to grow businesses and deliver sustainable solutions to society’s challenges.**

The Water Hub runs challenge events to identify partners, collaborators and innovators. It provides networking opportunities for businesses and the water and environment sector. This leads to facilitated research collaborations – matching business research and development needs with academics and facilities at research institutes, and business support and mentoring from partners.

The Water Hub offers small capital grants to help prime innovations and provides access to demonstration facilities to allow product testing in a live environment.

Water efficiency and behavioural innovation is one of the Water Hub’s key challenge areas, supporting our ambitious goal to reduce PCC. Building on activities at our Innovation Festival 2018, the Water Hub will run a proof-of-concept competition, sponsored by NWL, calling for ideas to deliver sustainable behaviour change in water use. The best will be taken forward in our Every Drop Counts initiative.

## **3.6 Building successful economies in our regions** continued

### Outcome 14 continued

#### Digital partnerships

We rely on world class digital partners to support our information and communications technology and services. These partners provide flexible access to expert technical knowledge and experience in a competitive skills market.

We will adopt a new partnership model to support the delivery of our digital strategy. In particular we are looking to create a series of smaller partner frameworks that are clustered around a particular set of products or digital services.

As part of our Think Digital initiative we are working with leading global technology company Wipro and digital experience design specialists Radley Yeldar to implement a cutting edge digital experience platform. This will provide not only a significantly improved digital customer experience, but will also allow us to realise the benefits of an agile and flexible digital platform. As a result we will be able to implement enhancements to the digital customer experience quickly and iteratively, working with a pool of specialist digital partners.

We have recently awarded a framework for unified communications to O2, supporting our aspiration to provide a seamless and efficient communications experience for our employees. In the run up to 2020-25 we will also award tenders for smaller, more dynamic work packages based around a range of specialisms: customer digital experience, Microsoft services, cloud platforms and data science/business intelligence. Working alongside a renewed system integrator framework, these frameworks are likely to attract a different breed of digital partner.

#### Developer partnerships

Working in partnership is essential to support growth and ensure that we align our investment in infrastructure with new housing and industrial development. New developments have multiple roles in supporting economic growth, including the provision of homes for workers and premises for businesses, the generation of income for local authorities and the creation of jobs both on the construction site and in the wider supply chain.

Making sure we are able to respond effectively to growth in our regions also supports our developer customers, from both a customer experience perspective, which assists in our D-MeX performance, and from a business viability perspective when assessing the potential of new sites for investment.

#### Ofwat IAP test areas

-  Engaging customers
-  Delivering outcomes for customers

We work in partnership with local authorities, developers, land owners, local communities and other key stakeholders to make sure that every opportunity is taken through the planning system to fully support development within our region.

We ensure that infrastructure capacity is available by influencing decisions through the planning process and responding to predicted growth. Our partnership approach to aligning infrastructure and growth has been recognised at the Royal Town Planning Institute North East's Awards for Planning Excellence through the North Morpeth Strategic Sewer project.

In 2020-25, we will continue our active engagement in the forward planning process to support the delivery of infrastructure that facilitates growth in line with the aspirations set out both in Local Plans produced by local authorities and in Neighbourhood Plans produced by communities. Where investment is required, we will work in partnership with the local planning authority and developers on a site-specific basis to identify sustainable and innovative approaches to accommodating growth.

#### Environmental partnerships

We work closely with organisations that have responsibilities towards the environment or an interest in environmental protection. We have a strong track record of partnership working in the environment, including more than 30 years' experience of working with environmental partners to manage our sites to improve biodiversity.

In our NW operating area, the NIDP is a unique, industry-leading partnership that plans for and delivers integrated drainage schemes.

In our ESW operating area, our Chelmer and Blackwater Partnership provides agri-advice to land managers to deliver improvements in river water quality. The partnership has been used as a model for other drinking water partnerships.

Since 2013, our environmental partnership activity has been strengthened further by the development of CaBA. This initiative facilitates and promotes partnership working in catchments for the benefit of the water environment.



## 3.6 Building successful economies in our regions

continued

### Outcome 14 continued

CaBA brings together a wide range of partner organisations, including local Rivers Trusts and Wildlife Trusts, Groundwork, local authorities, water companies, and the EA. We play a leading role in our local catchment partnerships, supporting projects financially and in-kind where possible. We also support CaBA at national level through the CaBA National Support Group.

Our Integrated Approach partnership principle sets out our vision for partnership working in the environment: we will build on our excellent foundations by seeking opportunities to work in partnership with others for shared benefit. This vision applies to all of our partnerships active 'in the environment'.

**42** For more information on our Integrated Approach partnership see Section 2.3

This includes partnerships focused on:

- Drainage and flooding;
- Catchment partnerships;
- Local Nature Partnerships;
- Coastal areas;
- Rural and upland areas (including those protecting drinking water); and
- Conservation and biodiversity.

### The Catchment Based Approach

**CaBA is a highly ambitious national movement, supported by Defra, which embeds collaborative working and supports Catchment Partnerships to deliver cross-cutting environmental improvements.**

Focus areas include rural land management, water stewardship, water quality, biodiversity, flood risk management and community engagement.

We support all nine Catchment Partnerships in our operating areas, working with other partners including the EA, Rivers Trusts, Wildlife Trusts, Groundwork and local authorities to deliver shared objectives.

Since its launch in 2013, we have contributed more than £100k to CaBA, and also supported projects through staff time and operational activity, helping to leverage over £2m to improve our catchments.

CaBA already plays a key role in helping our regions meet the challenges of the WFD, and will be influential in achieving the goals of the Government's 25-year plan. It is still evolving, and with the investment we plan for 2020-25, we are confident it will help us achieve our ambitious goals for the environment.



#### Ofwat IAP test areas

**EC** Engaging customers

**OC** Delivering outcomes for customers

It also includes relevant customer partnerships such as Water Rangers, and other emerging areas such as energy.

Through our Thinking Ahead workshops, we worked with our partners to develop our approach to the environment and our shared ambition for brilliant partnership working.

**42** For more information on our Thinking Ahead workshops see Section 2.3

In 2020-25, we will work closely with our environmental partners in the following areas:

- Delivering partnership schemes in the WINEP as part of our catchment-based integrated approach commitment;
- Our 'Improving the Water Environment' scheme, an ambitious and ground-breaking partnership approach to drive environmental investment; and
- In taking up opportunities to work with energy partners to develop, fund and operate renewable energy projects, such as solar PV on our sites, in order to reduce our carbon emissions and meet our ambitious goal for carbon neutrality.

We will work with similar utilities in other sectors including our UK sister companies within the CK Group around the adoption of low emission vehicles. We will also explore opportunities to work with local authorities and infrastructure owners in setting up refuelling/charging networks.

Partnership working is therefore an essential part of our 2020-25 plan for the environment, and a key tool through which we will meet our regulatory obligations and work towards our ambitious goals.

# 4.0

- [4.1 How we will incentivise good performance](#)
- [4.2 Developing bespoke PCs](#)
- [4.3 Setting PC levels](#)
- [4.4 Developing the ODIs](#)
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# MEASURING AND INCENTIVISING SUCCESS

In Section 3 we set out the outcomes that are important to our customers along with our plans for 2020-25. We also included information about the measures we will use to monitor and report on our performance for each outcome.

In this section we provide further information about our PCs for 2020-25 for each of those measures, and how we plan to incentivise further improvements in service levels.



## 4.1 How we will incentivise good performance

The components that form our approach to measuring and incentivising success are:

- 17 common PCs;
- 32 bespoke PCs;
- 32 PCs have financial incentives;
- Incentives applied to enhancements; and
- ODIs developed and shaped by our customers.

We have chosen to discontinue three PCs:

- Satisfied with value for money of water services – Northumbrian region;
- Satisfied with value for money of sewerage services - Northumbrian region; and
- Satisfied with value for money of water services - Essex & Suffolk region.

These have been replaced them with PCs that we consider to be more relevant to our ambitious goal to eradicate water poverty in our operating areas by 2030.

The PCs that we will use during 2020-25 are:

- NWL Independent Value for Money survey
- Percentage of households in water poverty;
- Awareness of additional support;
- Satisfaction of customers who receive financial and non-financial additional support;
- Percentage of void household properties; and
- Non-household gap site matching.

These measures focus on affordability and value for money for customers who need additional support. These are issues that matter to our customers.

We expect that CCWater will continue to publish its satisfaction with value for money measures annually through Water Matters. The results will be available for our customers and stakeholders to scrutinise. It is not necessary for us to continue with these measures as PCs when we have replaced them with PCs that better reflect our ambitious goal.

The timing of the publication of the CCWater results are not within our control, and may not be in time with the publication of our Annual Performance Report. It is more appropriate that we adopt measures that we can make sure can be published accurately within our

### Ofwat IAP test areas

- Engaging customers
- Delivering outcomes for customers

### Annual Performance Report.

Our scores in our own independent value for money survey have remained consistent over the last three years, surpassing our PC and demonstrating that we have maintained our customers' overall satisfaction with the services we provide since 2015. The new measures that we are proposing will result in further improvements for our customers, particularly those who find themselves in circumstances that may make them vulnerable which is consistent with our inclusivity strategy.

All of our measures fall into one of two categories:

- Common measures – these have been determined by Ofwat and apply to the whole sector. These measures enable our customers and regulators to compare our performance with the levels of performance provided by the other companies. Having these comparative measures reveals what good or poor performance looks like, and so helps provide a basis for putting monetary incentives on performance;
- Bespoke measures – these are additional measures that we have developed to reflect aspects of our performance that are important to our customers or that reflect issues that are specific to our operating areas.

### How we will incentivise good performance

Our customers support the use of ODIs to incentivise further improvements in service levels.

**203** This is explained in detail in Section 4.4

We will apply one of the following types of incentives to each of our measures:

- Financial reward for outperformance and penalty for underperformance;
- Financial penalty for underperformance only (ie no reward); or
- Reputational incentive only. Here there will be no financial penalty but there will be a reputational impact if performance is poor. This would include, for example, the fact that we report our performance for all of our measures in our APR.

For many years we have used a 'balanced scorecard' to drive our performance on an ongoing basis. This enables everyone in our company, including our Board, to monitor how we are performing against our vision to be industry leader. This long-established practice has played an important role in delivering step changes in performance in a number of areas. The approach also puts us in a strong position to meet the challenge of delivering against new measures in future.

## 4.1 How we will incentivise good performance

continued

### Common measures

The full set of PCs that we will report on in 2020-25 is summarised here.

Where information is available we have shown how our performance compares with that of other companies and our target levels of performance.

The fourth column explains the type of incentive that we will apply in relation to each measure.

		Our current level of performance compared with the industry	Our target level of performance for 2020-25 compared with the industry	ODI type (rewards/penalties/reputational incentive)
<b>C-MeX</b>	An overall measure of customer experience	●	●	£+/£-
<b>D-MeX</b>	An overall measure of developer experience	●	●	£+/£-
<b>Drinking water quality CRI</b>	An index of overall water quality that takes account of a number of different tests for aspects such as bacteria, water cloudiness, metals content and pesticides	●	●	£-
<b>Interruptions to supply &gt;3 hours</b>	The average amount of time that our customers experience an interruption to their supply in a year in minutes and seconds per property (including interruptions of three hours or longer)	★	●	£+/£-
<b>Leakage – NW</b>	The number of litres of treated water lost in distribution each day measured in Megalitres (1 ML = a million litres). We will report annually on the average level from the previous three years	●	●	£+/£-
<b>Leakage – ESW</b>	The number of litres of treated water lost in distribution each day measured in Megalitres (1 ML = a million litres). We will report annually on the average level from the previous three years	★	★	£+/£-
<b>Per capita consumption</b>	The number of litres of water used by each customer per day. We will report PCC annually as the cumulative percentage reduction of litres per person per day, with 2019/20 being the base year of 0%	●	●	£+/£-
<b>Internal sewer flooding</b>	The number of internal flooding incidents per 10,000 wastewater connections per year	●	●	£+/£-
<b>Pollution incidents</b>	The number of Category 1-3 pollution incidents reported to the EA per 10,000km of wastewater network	★	●	£+/£-
<b>Mains bursts</b>	The number of bursts that occur over one year per 1,000km of main	●	●	£+/£-
<b>Sewer collapses</b>	The number of sewer collapses that occur over one year per 1,000km of sewer	●	●	£-
<b>Unplanned outage at water treatment works</b>	The proportion (%) of our total water production capacity that is unavailable due to reasons beyond our control (sometimes we reduce our total production capacity in a planned way to carry out maintenance)	●	●	£-
<b>Treatment works compliance</b>	The percentage of treatment works complying with discharge permits for water released into the environment	●	●	£-
<b>Risk of flooding</b>	The percentage of population at risk of sewer flooding in a 1 in 50 year storm	●	●	R
<b>Risk of severe restrictions in a drought</b>	The percentage of the population at risk of experiencing severe water supply restrictions in a 1 in 200 year drought	★	★	R
<b>Priority Services Register - reach</b>	The percentage of households that we supply with water and/or wastewater services which have at least one individual registered on the PSR	●	●	R

#### Performance key

- ★ leading
- upper quartile
- above average
- below average
- no data

£+ rewards apply for outperformance

£- penalties apply for underperformance

R reputational incentive only

## 4.1 How we will incentivise good performance

continued

### Bespoke performance commitments (measures)

		Our current level of performance compared with the industry	Our target level of performance for 2020-25 compared with the industry	ODI type (rewards/penalties/reputational incentive)
<b>Priority Services Register - review</b>	The percentage of distinct households with individuals on the company's PSR contacted at least once over the previous two years to ensure they are still receiving the right support	●	●	R
<b>Water poverty</b>	The percentage of households in water poverty – defined by Ofwat as paying more than 3% of income remaining after housing costs (rent/mortgage) on water bills	●	★	R
<b>NWL independent trust survey</b>	Average (mean) score out of 10 in a customer survey about whether we are a company they can trust	●	●	R
<b>C-Sat of customers who receive additional financial support</b>	Average (mean) score out of 10 in a survey of satisfaction among customers who have received additional financial support	●	★	R
<b>C-Sat of customers who receive additional non-financial support</b>	Average (mean) score out of 10 in a survey of satisfaction among customers who have received additional non-financial support	●	★	R
<b>Awareness of additional financial support</b>	The percentage of customers who confirm they are aware of the additional financial support services we provide	●	★	R
<b>Awareness of additional non-financial support</b>	The percentage of customers who confirm they are aware of the additional non-financial support services we provide	●	★	R
<b>Written complaints</b>	Time taken to respond to a customer's complaint	●	●	R
<b>Voids</b>	The percentage of household properties recorded as voids in our database	●	●	£+/£-
<b>Non-household gap sites</b>	The percentage of non-household properties on the VOA Rating list that are detailed in our database (including non-billable properties and properties under charge)	●	●	R
<b>Discoloured water</b>	The number of contacts about water colour in a year per 10,000 customers supplied	●	●	£+/£-
<b>Taste and odour</b>	The number of contacts about the taste or smell of water per 10,000 customers supplied	★	★	£+/£-
<b>Interruptions to supply 1-3 hours</b>	The average amount of time that our customers experience an interruption to their supply in a year in minutes and seconds per property (including interruptions lasting 1 hour to 2 hours 59 minutes and 59 seconds)	●	★	£+/£-
<b>Interruptions to supply &gt;12 hours</b>	The number of properties that have experienced an interruption lasting 12 hours or longer in the year	●	●	£+/£-
<b>Response time to visible leaks</b>	The average time taken to fix a visible leak (in days) over the year	●	●	£+/£-
<b>Event Risk Index</b>	An index that measures water company response to water quality events	●	●	£-

#### Performance key

- ★ leading
- upper quartile
- above average
- below average
- no data

£+ rewards apply for outperformance

£- penalties apply for underperformance

R reputational incentive only

## 4.1 How we will incentivise good performance

continued

### Bespoke performance commitments (measures)

continued

		Our current level of performance compared with the industry	Our target level of performance for 2020-25 compared with the industry	ODI type (rewards/penalties/reputational incentive)
<b>Repeat sewer flooding</b>	The number of properties that have suffered from internal flooding more than once in a five-year period (this includes flooding from the public and transferred network and includes severe weather)	●	●	£+/£-
<b>External sewer flooding</b>	The number of external flooding incidents in a year	●	●	£+/£-
<b>Sewer flooding risk reduction</b>	The number of properties benefiting from a flood risk reduction	●	●	£-
<b>Sewer blockages</b>	The number of incidents of blocked sewers in a year	●	●	£+/£-
<b>Greenhouse gas emissions</b>	Tonnes of carbon emitted into the environment each year	●	★	£+/£-
<b>Bioresources</b>	The percentage of sludge treated by advanced anaerobic digestion and recycled to land	★	★	R
<b>Bathing water quality</b>	The percentage of designated coastal bathing waters that are classed as good or excellent by the EA	●	●	£+/£-
<b>Water environment improvements</b>	Kilometres of accessible water environment (rivers and coastline) improved	●	●	£+/£-
<b>Abstraction incentive mechanism</b>	Average number of megalitres (ML) of water abstracted each day at an environmentally sensitive site during periods when water levels are low	●	●	£+/£-
<b>British Standards Institution Award for Inclusive Standards</b>	To achieve the standard	●	●	R
<b>NWL Independent Value for Money survey</b>	Average (mean) score out of 10 in a customer satisfaction survey	●	●	R

#### Performance key

- ★ leading
- upper quartile
- above average
- below average
- no data

- £+ rewards apply for outperformance
- £- penalties apply for underperformance
- R reputational incentive only

## 4.2 Developing bespoke PCs

### Developing bespoke PCs

The main purpose of bespoke PCs is to enable companies to respond to what is important to their customers, reflect any specific local challenges, and create the opportunity for more innovation in the way performance is measured in the industry. Ofwat's methodology also included some areas where all companies were required to have bespoke PCs, such as in the areas of resilience, asset health, the environment and vulnerable customers.

Our first priority in developing bespoke PCs has been to make sure that our measures cover all of the things that matter the most to our customers.

At the start of our PR19 process (in our 'Defining the Conversation' research, 2016) we asked customers which areas of our business they most wanted to talk to us about and potentially influence. They told us that they were most interested in how well we were informing customers about our services; value for money; the reliability of supply; and our finances. Customers who needed additional help and support were particularly likely to need value for money and reliability of supply.

The need to improve communication with customers, particularly around value for money, began to emerge as a key area for improvement. CCWater's 'Water Matters' research in 2016 showed that customers' awareness of the option to have a water meter, and to revert to unmeasured charges if this did not work out, was relatively low. Awareness of the additional support available for customers in difficult financial or health circumstances was also low. The research showed that very low numbers of customers were accessing our support schemes, and the Water Forums challenged us on this.

A further factor was that our customers showed more support than they had done previously for our helping customers in difficult circumstances, with a majority of customers agreeing to a cross-subsidy on all bills in our 2016 Social Tariffs Research. Customers at our 2018 Tariff Structures workshops also wanted us to do more to promote the financial support we offer. Our customers were overwhelmingly in favour of water bills being affordable for all, and us supporting those in difficult circumstances.

A further finding was that customers wanted us to improve awareness about meters (Metering, Supply and Demand, 2017).

#### Ofwat IAP test areas

- Engaging customers
- Delivering outcomes for customers

Collectively, these findings led to us developing our bespoke PCs for water poverty, satisfaction of those who receive additional support and awareness of support schemes.

Our customers also played a key role in the development of an innovative bespoke PC to measure our impact on the environment. We already measure our impact on the environment in wide-ranging ways to make sure that we not only protect the environment in the way we deliver our services but that we also go above and beyond this to proactively enhance the environment. Our customers told us that the wider water environment was of more importance to them than the quality of water in rivers and at the coast (Bathing Water Quality, 2015; River Water Quality, 2016), which is what we currently measure. In response, we are introducing a new PC for kilometres of accessible water environment improved through our partnerships with others.

We have looked at the limitations of some of the more well-established industry measures and considered how we could improve them. This too has influenced the development of our bespoke PCs.

The clearest example of this is the existing measure of interruptions to supply which does not incentivise companies to reduce interruptions of shorter duration (below three hours). As we are at the industry frontier for performance on interruptions that last longer than three hours, we were also very aware that we are reaching the limit of what can be achieved on the current measure.

Our customers have also told us that response times are important to them and that they would like to see this reflected in our measures. As a result, we are introducing a new, more stringent PC for interruptions which will include interruptions of one hour or longer. We believe this could be adopted across the industry in future to drive improvements in service in this area to a new frontier level.

**A** Definitions for our bespoke measures are included in Appendix 4.1, which is an updated version of the definitions that were submitted to Ofwat in May 2018.

## 4.3 Setting PC levels

### Our approach to setting PC levels

We have used many sources of information to determine our PC levels including:

- Customer research and engagement findings;
- Comparative information; and
- Historic performance, trends and in some cases the maximum improvement achievable along with expert judgement.

This information has been reviewed at a number of triangulation sessions, both within our company and also with the Water Forums.

We have placed a particular focus on the use of comparative information when setting PC levels. We feel that this is crucial in order for companies and Ofwat to promote fairness and transparency for customers across the water industry. A particular point that would undermine fairness and transparency for the common measures would be if some companies were rewarded for an equivalent level of performance which saw others penalised, and vice versa.

In response to Ofwat IAP our April 2019 plan includes PC level changes as shown within the table.

Key factors that influenced setting stretching PCs							
Common measure	Reliable comparative information	Customer views including priority for improvement and CBA	Water Forum views	Historical trend, min and max levels	Other specific requirement or ambition	Ofwat IAP	Conclusion
<b>Drinking water quality – CRI</b>	Some early comparative information available which indicates an UQ level of 2.27.	High importance, but low priority for improvement. Customers expect service level to remain very high.	Supportive.	Only 2016 and 2017 data available. UQ 2.27, leading Water and Sewerage Company (WASC) Wessex with 0.66, Lagging WASC Severn Trent with 8.32.	A PC level of 0 is mandated as these are statutory standards.	Request to set deadband at 1.5.	2024/25 PC level set at 0, with a penalty deadband of 1.5.
<b>Interruptions to supply &gt; 3 hours (Mandatory UQ PC)</b>	Ofwat has forecast upper quartile performance which moves from 4m:17s in 2020/21 to 3:00 in 2024/25.	Important for customers, but some aspects not adequately covered by this measure.	Need to demonstrate continued leadership in this area by introducing new measures. Original PC proposal based on our own assessment of the UQ did not look sufficiently stretching.	Forecast UQ at start of 2020-25 is higher than our best performance. However, there is a lower limit on how far performance can be driven down safely in this area. Some historical performance very strong although a single large event can add several minutes to performance and cause significant fluctuations in performance from one year to the next.	Common measure subject to convergence, the results of which have been reflected in these numbers.	UQ view published.	Set PC at Ofwat UQ. Set further ambition by introducing measures for 1-3hr and >12hr interruptions with stretching targets.
<b>Leakage – NW</b>	Current l/p/d performance is average, but strong resource position reducing Sustainable Economic Level of Leakage (SELL).	Engagement work in 2017 identified customer preference in long term of 11% of Distribution Input. In Service Valuation tool, customers selected 115Ml/d.	Supportive.	Current performance is 137Ml/d, around 20% of Distribution Input.	Methodology expects 15% improvement or justification why not. Our WRMP indicates a 15% reduction in 2020-25 with further reductions thereafter.	No concern with PC level.	2024/25 PC level at 15% improvement = 117.7Ml/d. Moves towards customer view in the long term while balancing bill impacts in strong resource area.

## 4.3 Setting PC levels

continued

### Our approach to setting PC levels

continued

In addition, in some key areas we felt it important to demonstrate industry leadership, and have set extremely stretching PC levels in line with our ambitions set out Section 3 of this plan. Most notably, this relates to eradicating water poverty and becoming carbon neutral.

Another example is the introduction of a bespoke PC for the speed with which we repair visible leaks, as we recognise that this is an issue that customers feel very strongly about (Metering, Supply and Demand, 2017).

Throughout the process of identifying and refining our list of bespoke measures we have engaged the Water Forums. They are supportive of our proposals.

The table on the right indicates, for each measure, the key factors that we have used to establish an appropriate and stretching PC level.

**A** For further details see Appendix 4.2

Key factors that influenced setting stretching PCs							
Common measure	Reliable comparative information	Customer views including priority for improvement and CBA	Water Forum views	Historical trend, min and max levels	Other specific requirement or ambition	Ofwat IAP	Conclusion
<b>Leakage – ESW</b>	Current l/p/d performance better than UQ, close to frontier if not at frontier.	Engagement work in 2017 identified customer preference in long term of 9% of Distribution Input. In service valuation tool, customers selected 62Ml/d.	Supportive.	Historic performance is better than UQ or leading. Currently at 66Ml/d, around 15% of Distribution Input.	Methodology expects 15% improvement or justification why not. Our WRMP indicates a 17% reduction in 2020-25 with further reductions thereafter.	No concern with PC level.	2024/25 PC level set at 17.5% improvement = 51.6Ml/d. Long term target to lead and move towards customer view.
<b>Per capita consumption</b>	Due to recent convergence activity, updated comparative data not yet available.	Metering and WRMP engagement found customers want us to provide them with more information on saving water. Customers selected a 6.8% improvement in our service valuation tool, however against pre-converged figures.	Supportive	Current performance is 148 l/p/d pre-converged and 142 l/p/d post-converged.	EA criticised level of ambition in draft WRMP (4% improvement from 2020-2025), revised short and long term targets accordingly. National Infrastructure Commission recommending a level of 118 l/p/d by 2050.	No concern with PC level.	2024/25 PC level set at 5.3% improvement. Goal of 118 l/p/d for 2040.
<b>Internal sewer flooding (Mandatory UQ PC)</b>	Figures for UQ position are based on Ofwat figures.	High customer priority for improvement. Customers selected a level of 238 in our service valuation tool, which is over 26% higher than our proposed PC.	Supportive of significant reduction.	2018/19 converged performance is 500, UQ is 217 incidents, reducing to 177 by 2024/25.	Ofwat methodology requires performance at the forecast UQ level. Converged measure changed how incidents are recorded and performance changed adversely as a consequence.	UQ view published. All companies required to adopt.	Adopted Ofwat UQ levels for PC.

## 4.3 Setting PC levels

continued

### Our approach to setting PC levels

continued

Common measure	Key factors that influenced setting stretching PCs						
	Reliable comparative information	Customer views including priority for improvement and CBA	Water Forum views	Historical trend, min and max levels	Other specific requirement or ambition	Ofwat IAP	Conclusion
<b>Pollution incidents (Mandatory UQ PC)</b>	Matches the reporting definition used in the EA's EPA. We have forecast UQ on the basis of the industry achieving a 40% reduction by 2024, at 72 incidents in 2020 tightening to 54 in 2024.	Matches the reporting definition used in the EA's EPA. Our PC matches Ofwat's stated industry UQ position of 72 incidents, reducing to 57 in 2024.	Our initial proposal with 2024 PC level set at UQ did not appear stretching when compared to our most recent performance, and therefore we tightened our target to 42. We have subsequently re-forecast this position to match the industry UQ position following commentary from Ofwat on our initial submission.	Very significant improvement in the last reporting year to 51. Too soon to see if this is sustainable.	Ofwat methodology requires performance at the forecast UQ level. EA WISER requires 40% improvement.	UQ view published. All companies required to adopt.	PC level set in line with Ofwat view of UQ.
<b>Mains bursts</b>	Yes, industry data provided to discoverwater.co.uk. We are forecasting an upper quartile of 3,122 by 2024/25.	Bursts are misunderstood by customers as leaks which are high priority or interruptions which are medium priority. In asset health engagement, customers expressed a preference for mid ground to proactive management of asset health which equates to stable to improving performance.	Supportive.	Burst performance is currently worse than average. However minimal impact on customers as evidenced by leading interruptions performance.	Our forecast UQ includes the most recent converged data. Ofwat focus on bursts as asset health.	No concern with PC level.	2024/25 level set at the forecast UQ, including anticipated rise in bursts due to leakage activity. PC set at 3,122 bursts.
<b>Sewer collapses</b>	Due to recent convergence activity, updated comparative data not yet available.	Medium priority for improvement. In asset health engagement, customers expressed a preference for mid ground to proactive management of asset health which equates to stable to improving performance.	Supportive.	Our performance has increased adversely due to the convergence work to 11.95 per 1,000km.	Common measure required for asset health.	Request to improve year on year reductions.	We are proposing an improvement to 8.13 collapses per 1,000km by 2024/25.



## 4.3 Setting PC levels

continued

### Our approach to setting PC levels

continued

Common measure	Key factors that influenced setting stretching PCs						Conclusion
	Reliable comparative information	Customer views including priority for improvement and CBA	Water Forum views	Historical trend, min and max levels	Other specific requirement or ambition	Ofwat IAP	
<b>Unplanned outage at water treatment works</b>	No, new comparative measure.	Medium priority for improvement. Good evidence that customers do not expect unplanned or lengthy interruptions and want resilience in this area. In asset health engagement, customers expressed a preference for mid ground to proactive management of asset health which equates to stable to improving performance.	Supportive.	New measure, no comparative or historic data. PC set at 10% better.	Common measure required for asset health.	No concern with PC level.	Due to data gap PC has been set at 10% improvement from 2020/21 to 2024/25.
<b>Treatment works compliance</b>	Yes, definition Matches EPA Objective	Some evidence that going above and beyond statutory requirements is not a high priority to customers. Further, river and bathing water quality tend to be medium-low priorities for improvement.	Beyond expectations – were supportive of lower target	Strong performance in this area from WWTW, some challenge from compliance with WTW permits.	Our ambition is to be a 4-star company (EA EPA highest accolade). 99% required to meet ambition. EA WISER requires 100% compliance with all permits. Hence, we are not proposing a reward.	Expected level is 100% for all companies.	PC set at 100% with a penalty deadband of 99%.
<b>Percentage of population at risk of flooding in a 1 in 50 year storm</b>	No, new measure.	Reducing sewer flooding is a high priority, protection to 1 in 50 however, may not be the most cost beneficial solution for customers in all cases.	Very supportive of our bespoke risk reduction measure in this area, which reflects a wider range of risk reduction activity.	Have assessed 35.17% of population being at risk from a 1 in 50 year storm.	Our ambition is to improve to 22% to demonstrate an improving trend whilst also improving datasets.	No concern with PC level.	PC level for 2024/25 set at 22%.

## 4.3 Setting PC levels

continued

### Our approach to setting PC levels

continued

Common measure	Key factors that influenced setting stretching PCs						Conclusion
	Reliable comparative information	Customer views including priority for improvement and CBA	Water Forum views	Historical trend, min and max levels	Other specific requirement or ambition	Ofwat IAP	
<b>Risk of severe restrictions in a drought</b>	Published WRMPs contain supply demand balances, no comparative data on this measure.	1. Very few customers (none in NW) have experienced restrictions, although some have experienced long-term interruptions 2. Customers are more accepting of reduced pressure and hosepipe bans than other types of restrictions 3. They may see 1 in 20 year risk as acceptable.	Supportive.	We are currently performing at 0%.	The supply and demand balance surplus for WRMP has been established on a drought with a return period of >200 years.	Request for additional information.	We aim to maintain current performance. Additional information provided.
<b>Priority Services Register – Reach</b>	CCWater industry comparisons place us average (slightly over average NW, slightly under average for ESW).	Customer awareness of our PSR is currently low. Customers tell us they want to be better informed about our Priority Services Register.	Very supportive.	Low reach, lower than 1%.	Our ambition is to be upper quartile.	Added in line with Ofwat methodology.	Set to achieve 10% by 2024/25.
<b>Priority Services Register – Review</b>	CCWater industry comparisons place us average (slightly over average NW, slightly under average for ESW).	Customer awareness of our PSR is currently low. Customers tell us they want to be better informed about our Priority Services Register.	Very supportive.	Low review of the priority services register, less than 10% reviewed.	Our ambition is to be upper quartile.	Added in line with Ofwat methodology.	To achieve a 90% review each year 2020/21 to 2024/25.

## 4.3 Setting PC levels

continued

### Our approach to setting PC levels

continued

Bespoke measure	Key factors that influenced setting stretching PCs						Conclusion
	Reliable comparative information	Customer views including priority for improvement and CBA	Water Forum views	Historical trend, min and max levels	Other specific requirement or ambition	Ofwat IAP	
<b>Water poverty</b>	None.	There is strong evidence that a stable and affordable bill is highly important to customers.	Water Forums commended our ambition.	Current performance is assessed as 18.4%.	Goal to eradicate water poverty by 2030.	No concern with PC level.	2024/25 PC set at 6.3% improving to 0% by 2030.
<b>NWL Independent trust survey</b>	Our trust score in the annual CCWater 'Water Matters' research has varied slightly since 2014. NW has been rated first or second by our water and sewerage customers. ESW scores are more challenging, however UQ performance was achieved in 2015/16.	In our outcomes review "We are a company that customers can trust" was ranked as one of the highest priorities by customers. It is important for us that our customers have trust and confidence in us and the services we deliver.	Supportive.	Historically, performance with our Independent domestic tracking survey has varied between 8.6 and 8.8 out of 10. Whilst a different measure this is consistent with UQ performance in the CCWater survey.	To sustain a high level of trust for credibility and confidence reasons.	No concern with PC level.	To sustain a trust score of 8.8 out of 10 between 2020/25 and improve this to 9 out of 10 by 2030.
<b>NWL Independent value for money survey</b>	None.	There is strong evidence that a stable and affordable bill is highly important to customers.	Supportive.	8.2 out of ten for the last four years.	Affordable and inclusive services.	Measure retained in line with feedback from Ofwat.	To achieve 8.2 each year 2020/21 to 2024/25.
<b>Satisfaction of Customers who receive additional non-financial support</b>	No industry comparisons available, however we are comparing performance against the C-SAT of our overall customer base.	Conversations with vulnerable customers found the word 'vulnerable' can be a stigma. Our strategy is now focussed on inclusivity and this is a measure to support that.	Supportive.	Satisfaction of overall customer base has varied between 8.5 and 8.7 in recent years. Customers who receive additional support tend to be less than satisfied.	Our ambition for overall customer satisfaction is 8.8. We want to match that for our customers who receive additional support.	Split to reflect financial and non-financial measures in response to Ofwat's request.	2020/21 PC is 8.7 out of 10, rising to 8.8 in 2023/24.
<b>Satisfaction of Customers who receive additional financial support</b>	No industry comparisons available, however we are comparing performance against the C-SAT of our overall customer base.	Conversations with vulnerable customers found the word 'vulnerable' can be a stigma. Our strategy is now focussed on inclusivity and this is a measure to support that.	Supportive.	Satisfaction of overall customer base has varied between 8.5 and 8.7 in recent years. Customers who receive additional support tend to be less than satisfied.	Our ambition for overall customer satisfaction is 8.8. We want to match that for our customers who receive additional support.	Split to reflect financial and non-financial measures in response to Ofwat's request.	2020/21 PC is 8.7 out of 10, rising to 8.8 in 2023/24.

## 4.3 Setting PC levels

continued

### Our approach to setting PC levels

continued

Bespoke measure	Key factors that influenced setting stretching PCs						Conclusion
	Reliable comparative information	Customer views including priority for improvement and CBA	Water Forum views	Historical trend, min and max levels	Other specific requirement or ambition	Ofwat IAP	
<b>Awareness of additional non-financial support</b>	CCWater publishes data for awareness of non-financial support, UQ is 47% and current leading is 52%.	Customers tell us they want to be better informed about our priority services register and customers who have accessed SupportPlus have rated it very highly. Awareness is currently low.	Supportive.	Current performance data is limited. Preliminary results show that customer awareness is at 39%. Our performance in the CCWater non-financial support awareness is 44%.	Consistent with our Inclusivity Strategy we want to maintain a leading position and improve this measure to 65%.	Split to reflect financial and non-financial measures in response to Ofwat's request.	65% by 2024/25.
<b>Awareness of additional financial support</b>	None.	Conversations with vulnerable customers found the word 'vulnerable' can be a stigma. Our strategy is now focussed on inclusivity and this is a measure to support that.	Supportive.	CCWater indicates we are below average in NW and slightly above in ESW for the number of customers registered on WaterSure or equivalent.	Consistent with our Inclusivity Strategy we want to maintain a leading position and improve this measure to 65%.	Split to reflect financial and non-financial measures in response to Ofwat's request.	65% by 2022/23.
<b>Written complaints</b>	Industry comparisons indicate that responding to 90% of complaints within one working day would be leading.	Our customers tell us that the speed with which we respond to complaints and the way in which we communicate is more important to them than minimising incidents.	Supportive.	After reviewing best practice from inside and outside the sector, we have set our PC to reduce the response time to written complaints from an annual average of five working days (2017-18) to: <ul style="list-style-type: none"> <li>– Three working days by 2019;</li> <li>– Two working days by 2020-25;</li> <li>– One-and-a-half working days by 2030.</li> </ul>	Ambition to provide unrivalled customer service in and out of sector. 90% response in one day is equivalent to an average response of two days. We have chosen the average response measure to ensure we expedite all complaint responses, including those that have breached one day.	No concern with PC level.	To reduce response times to written complaints to two days in 2020/21 and to maintain this through to 2024/25.

## 4.3 Setting PC levels

continued

### Our approach to setting PC levels

continued

Bespoke measure	Key factors that influenced setting stretching PCs						Conclusion
	Reliable comparative information	Customer views including priority for improvement and CBA	Water Forum views	Historical trend, min and max levels	Other specific requirement or ambition	Ofwat IAP	
<b>Voids</b>	Government statistics by local authority area. Ofwat retail services efficiency report from 2016/2017. NWL is 4.85% as at February 2018, sector average is 3.61%, government national is 2.69%.	Customers want low stable charges. By optimising voids we reduce costs and improve retail efficiency. But there is an operational cost to reducing voids.	Supportive.	2016/17 LA Govt stats: National 2.69%, Industry average 3.61%, LA Govt stats: North 4.36%, North actual 5.14% LA Govt stats: Essex 2.68%, Essex actual 4.17% LA Govt stats: Suffolk 3.73%, Suffolk actual 4.14%	Ofwat requires bespoke measure of voids as part of retail services efficiency.	No concern with PC level.	We have compared our numbers to the industry and the government numbers and set a target that brings us in line with the industry average, adjusting for the underlying numbers of empty properties in our three operating areas. The PC is to improve to the calculated optimum of 4.21% by 2025 and 4% by 2030.
<b>Gap sites</b>	No comparative data.	Customers want low stable charges, by optimising gap sites we reduce average bills and improve retail efficiency.	Supportive.	Impossible to calculate, the number of gaps is unmeasurable. We currently achieve a match rate of 76.5% against VOA listings.	Ofwat requires bespoke measure of gaps as part of retail services efficiency.	No concern with PC level.	Gap sites by their nature are not visible to us. We will regularly match against the VOA listing and drive up the match rate from 76.5% to 95% by 2024/25.
<b>Discoloured water</b>	Not a comparative measure on <a href="http://discoverwater.co.uk">discoverwater.co.uk</a> .	Based on qualitative research this is a low priority for improvement – only a small number of affected customers consider contacting us about the issue. Based on quantitative research using our service valuation tool, customers on average selected a level between 1,904 and 2,012 contacts.	Supportive.	Performance has improved to 2,532 contacts in 2017. Over the last five years we have improved by 43%. Returns on our discolouration approach will diminish. However, we are still aiming for further improvement of 20%.	The DWI continues to monitor discoloured water contacts and will take action against poorly performing companies.	No concern with PC level.	2024/25 PC set at 20% better, 2,000 contacts. This sustained improvement is consistent with customer expectations and intended to satisfy DWI.

## 4.3 Setting PC levels

continued

### Our approach to setting PC levels

continued

Bespoke measure	Key factors that influenced setting stretching PCs						Conclusion
	Reliable comparative information	Customer views including priority for improvement and CBA	Water Forum views	Historical trend, min and max levels	Other specific requirement or ambition	Ofwat IAP	
<b>Taste and odour</b>	Yes, presented on discoverwater.co.uk.	Low priority for improvement.	Supportive.	Performance is in front of the UQ and leading group at 987 contacts. Only a modest further improvement is achievable without significant investment which would not be cost beneficial for customers.		Request to review proposed service levels.	PC set at 957 contacts, ahead of forecast UQ. Normalised data revised to clarify per 10,000 PC levels.
<b>Interruptions to supply between 1 and 3 hours</b>	No.	All interruptions are an inconvenience to customers. No specific research has been conducted on this measure. However, as performance with the >3 hours common measure reaches optimum levels, we see this as a way of improving sector performance.	Measure introduced in response to Water Forum challenge.	No data.	Our ambition is to create the next common measure to drive sector improvements in performance for the benefit of all water company customers. There is also a limit with what can be achieved with the >3 hour common measure.	No concern with PC level.	To improve by 10% on our average performance between 2018 and 2021 by 2024/25.
<b>Interruptions to supply greater than 12 hours</b>	Yes, some historic comparative information is available. As this is a resilience measure the data has not been normalised. It is a pure measure of where services have failed irrespective of the organisation's size.	Mixed evidence, over time, that reducing interruptions to supply is a priority for customers. Longer term interruptions are more inconvenient and more difficult to manage.	Supportive.	Historic data shows an UQ performance of 515 properties. Our average within the same timeframe is 486 properties.	This is a water resilience measure.	No concern with PC level.	To improve from 2020/21 to 2024/25 by 20% (500 to 400).

## 4.3 Setting PC levels

continued

### Our approach to setting PC levels

continued

Bespoke measure	Key factors that influenced setting stretching PCs						Conclusion
	Reliable comparative information	Customer views including priority for improvement and CBA	Water Forum views	Historical trend, min and max levels	Other specific requirement or ambition	Ofwat IAP	
<b>Response time to visible leaks</b>	No.	Customers view leaking water as a waste of an important resource. In our service valuation tool, customers selected a value of 7 days. Analysis of our customer contact data, however, shows that a significant number of repeat contacts are made within the same day, justifying an even tighter target.	Measure introduced in response to Water Forum challenge.	Data from 2016/17 indicates 10 days, 2017/18 8.6d and 2018/19 11.1d (part year). This is from a customer report to the pipe fix and leak stopping.	This measure tracks the time between leak reported and leak repaired which is the most important aspect for customers.	No concern with PC level.	To improve from 10 days to 4 days by 2024/25, exceeding the level selected by customers, and minimising repeat contact.
<b>ERI</b>	No.	Customers expect service levels in relation to drinking water quality to remain very high.	Supportive.	Data available for 2015, 2016, 2017 for NW and ESW and industry data for 2017. UQ determined from 1 year.	Ofwat suggest ERI as an asset health measure in the PR19 methodology. DWI expects companies to have effective management in place to minimise the scope and scale of water quality events.	No concern with PC level.	Our commitment is to achieve UQ performance by 2024/25.
<b>Repeat sewer flooding</b>	No, bespoke measure.	Strong evidence, over time, that reducing repeat sewer flooding is a high priority for improvement.	Measure introduced in response to Water Forum challenge.	2017/18 performance is 57 properties, very substantial improvement against 2015-20 PC of 496. Note: we have adjusted the measure definition for the next period to make it transparent for customers. In the current period we have improved significantly. Returns on our repeat sewer flooding approach will diminish. However, we are still aiming for further improvement of 35%.	We have an ambition to eradicate sewer flooding in the home due to our assets and operations.	No concern with PC level.	To improve from 57 to 37 by 2024/25 and progressing towards our ambition of zero.

## 4.3 Setting PC levels

continued

### Our approach to setting PC levels

continued

Bespoke measure	Key factors that influenced setting stretching PCs						Conclusion
	Reliable comparative information	Customer views including priority for improvement and CBA	Water Forum views	Historical trend, min and max levels	Other specific requirement or ambition	Ofwat IAP	
<b>External sewer flooding</b>	Yes, however measure subject to convergence.	Reducing sewer flooding is a high priority.	Supportive of reduction in external flooding.	Revised definition has adversely impacted performance.	To have a stretching target without diverting focus from the more important internal sewer flooding measure.	Request for additional stretch in PC level.	We will improve and drive 2020/21 performance from 25.15 to 15.05 incidents per 10,000 properties by 2024/25.
<b>Sewer flooding risk reduction</b>	No, bespoke measure.	Mixed evidence from our customers that reducing sewer flooding risk is a medium priority for improvement.	Supportive of this bespoke measure, which captures a wider and more cost beneficial range of risk reduction activity.	Targeted risk reduction to 7,400 properties set in line with our proposed enhancement in this area.		No concern with PC level.	Targeted risk reduction to mitigate risk at 7,400 properties. To be reviewed in line with final business case or removed if disallowed.
<b>Sewer blockages</b>	The UQ threshold is currently 13,544, then forecast to reduce to 11,100.	Mixed evidence which suggests reducing blockages is a medium priority for customers. Blockages contribute to flooding which is a high priority. This is also a measure of asset health where customers have expressed a preference for mid ground to proactive management of asset health which equates to improving performance.	Supportive.	2017/18 performance 11,934, UQ 13,544.	Managing blockages and influencing customer behaviour is part of our package of measures to improve flooding performance.	No concern with PC level.	A 11.2% improvement consistent with our flooding improvement package and remain in front of the forecast UQ threshold.
<b>Carbon</b>	Carbon accounting workbook and annual performance reporting.	There is good evidence, collected over time, that water industry customers place a medium level of importance on their water and sewerage company reducing its carbon footprint.	Water Forum commended our ambition.	2017/18 c 163,500 tCO <sub>2</sub> e.	Our ambition is to set the standard for the industry and be carbon neutral by 2027/28.	No concern with PC level.	2024/25 target is 23,898 tCO <sub>2</sub> e, representing a trajectory to 0 by 2027/28.



## 4.3 Setting PC levels

continued

### Our approach to setting PC levels

continued

Bespoke measure	Key factors that influenced setting stretching PCs						Conclusion
	Reliable comparative information	Customer views including priority for improvement and CBA	Water Forum views	Historical trend, min and max levels	Other specific requirement or ambition	Ofwat IAP	
<b>Bioresources</b>	Comparative data is available, UQ currently at 57%, forecast to rise to 85% by 2024/25.	External research suggests that support for renewable energy and the use of biomass is high, especially if it results in lower bills. There is good evidence, collected over time, that water industry customers place a medium level of importance on their water and sewerage company reducing its carbon footprint.	Supportive.	Currently performing at 100%.	Waste minimisation ambition and continuing to recycle biosolids to land is part of this. Ofwat methodology requires a bespoke bioresources price control measure.	No concern with PC level.	2024/25 PC set at 98%. Our aim is to maintain our current performance, whilst recognising that some sludge disposal routes may not always be available.
<b>Bathing water quality</b>	Yes, EA website and ONS.	Our bathing water research showed that improvement in the quality of sea water was not a high priority for customers.	The EA in particular demanded a stretching target.	25 bathing waters at Excellent, 32 (of 34) at Good or Excellent, all at Sufficient or Better. It is not cost beneficial for customers to deliver improvements at Spittal bathing water.		No concern with PC level.	PC set at 33 (97.06%) out of 34 at Good or Excellent from 2020/21 to 2024/25.
<b>Water environment improvements</b>	No.	Mixed evidence that customers consider "We work in partnership towards common goals" to be a high priority. Customers in our river water quality research wanted NW to do more on catchment management in partnership.	Supportive.	New measure, no historic data available.	This goes beyond km improved through WINEP delivery. It will demonstrate water environment leadership and help us achieve our ambitious goal to have the best rivers and beaches in the country.	Additional evidence on PC level setting requested.	Additional evidence provided. Target 10km per year from 2020/21 to 2024/25.

## 4.3 Setting PC levels

continued

### Our approach to setting PC levels

continued

Bespoke measure	Key factors that influenced setting stretching PCs						Conclusion
	Reliable comparative information	Customer views including priority for improvement and CBA	Water Forum views	Historical trend, min and max levels	Other specific requirement or ambition	Ofwat IAP	
<b>AIM</b>	No.	We have not specifically researched abstraction. However, there is some evidence that customers valued improving the wider water environment highly.	Supportive.	The historic data for this measure is bespoke to this site. The trigger level has been agreed with EA and set at -0.19m AOD.	This bespoke measure has been produced in accordance with Ofwat AIM guidance (2016). When the trigger level is breached and conditions are met, water will be abstracted from an alternate source to protect Ormesby Broad.	No concern with PC level.	AIM trigger established, when active abstraction controls will be implemented to protect Ormesby Broad.

## 4.4 Developing the ODIs

### Developing the ODIs

ODIs were introduced for the period 2015-20 to incentivise companies to improve performance through the use of financial penalties for poor performance and rewards for good performance, along with the associated reputational impact.

We support this approach, as it has the potential to drive greater improvements in service in areas that are valued by customers. It encourages us to innovate so that we can increase the rate with which our performance improves, enabling us to secure a reward while also benefiting customers. It also means that what customers pay for their water and wastewater services is linked to performance, ensuring that we are held to account for the service we deliver.

We will only receive rewards if we outperform our targets, only in areas

valued by customers and with reward rates linked to the value that customers place on further improvement. At the same time if we fail to achieve our targets we will be penalised.

For those measures with financial incentives attached, rewards will accrue for each unit of performance that is better than our PC, with penalties for each unit of performance that is worse than our PC. The figure below illustrates this approach.

The only exceptions are where we have introduced deadbands, which are described in more detail below.

### How customers have shaped our ODIs

The design of our package of ODIs is based on numerous conversations that we have had with our customers. The most relevant aspects of our customer engagement are

#### Ofwat IAP test areas

- EC** Engaging customers
- OC** Delivering outcomes for customers



**Our starting position is that all PCs will have a financial penalty and reward attached.**

summarised below.

### Service valuation research (2017/18)

This research enabled us to obtain two sets of valuations from a representative sample of our customers:

- The value that customers place on improving core aspects of the services we provide; and
- Customers' appetites for ODIs and insight into why they think we should strive to become the best.

### Additional ODI research (2018)

In the service valuation research, the maximum amount that customers could allocate to rewards was 10% of their bill. Following the service valuation research we were interested to understand whether customers would have allocated even more than 10% of their bill to ODIs. We contacted email participants of the original research and asked them about this. We then ensured that our ODI range was within the range acceptable to customers.

### Research on ODIs for bespoke measures (2018)

A third phase of service valuation engagement in 2018 was concerned with gaining customer valuations for a number of our more recently developed bespoke measures.

This approach allowed us to gather bespoke measures valuations that stand up robustly alongside those from our service valuation research.

**210** For detailed summary of incentivised enhancements

### Further Research on ODIs, February (2019)

This independent customer engagement was focused on understanding the level of customer support for some specific aspects of our ODI proposals which were challenged by Ofwat in its initial assessment of plans. This specifically tested the level of customer support for enhanced incentives.

The full report can be found in an Appendix to our IAP response.

### How we developed our ODIs

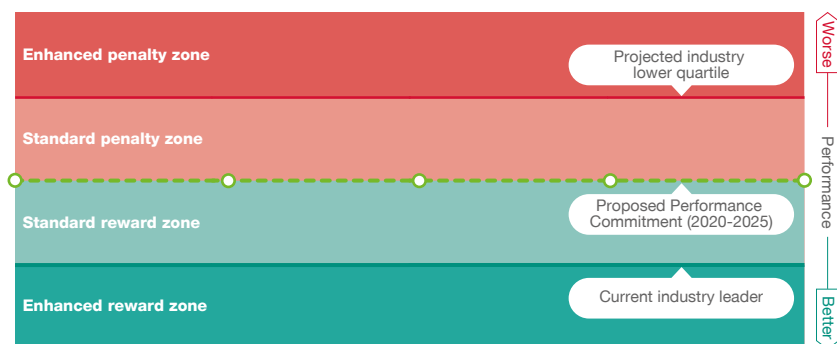
As described earlier in this section, there are three types of ODI that can be applied to a PC (financial rewards and penalties; financial penalty only; and reputational only).

To determine the most appropriate type of ODI for each PC we established an objective approach based on a series of questions and criteria.

**204** See Figure 8

Our starting position is that all PCs will have a financial penalty and reward attached, unless there are strong reasons why this should not be the case.

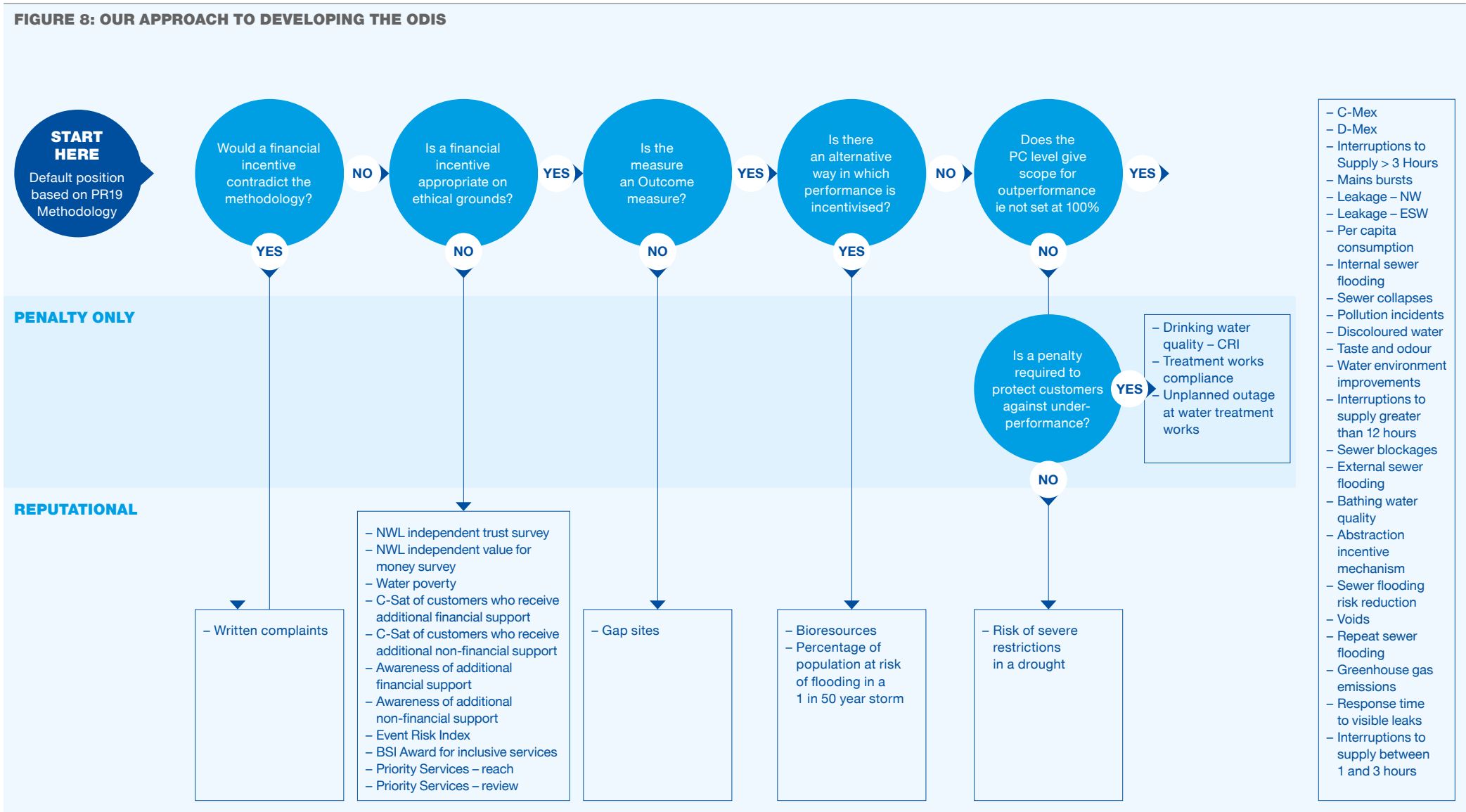
**GRAPH SHOWING INCENTIVE ZONES**



## 4.4 Developing the ODIs

continued

FIGURE 8: OUR APPROACH TO DEVELOPING THE ODIs



## 4.4 Developing the ODIs

continued

### Criteria 1: The methodology test

The PR19 methodology suggests that for written complaints a financial incentive may not be appropriate because it could discourage customer engagement and participation. We agree, and have chosen to apply a reputational incentive to this PC.

### Criteria 2: The ethical test

We considered whether a financial incentive would be ethical. We considered that it would be unethical to have a financial incentive for eleven of the PCs.

### Criteria 3: The Outcome test

The majority of our PCs relate to outcomes that will be delivered for customers. By necessity one of our PCs – Gap Sites – measures an activity rather than an outcome. It is unclear how far this will benefit customers so we felt it inappropriate to attach a financial incentive to this measure.

### Ofwat IAP test areas

- EC** Engaging customers
- OC** Delivering outcomes for customers

### Criteria 4: The alternative incentive test

We considered whether or not there was an alternative way in which performance is financially incentivised. We concluded that our PC on bioresources was already incentivised through the introduction of a competitive market in this area.

We also feel that our bespoke measure of flood risk is more relevant for our customers than the common measure, a view supported by the Water Forums. We are therefore proposing to place a financial incentive on our bespoke measure rather than on the common one.

In summary we are proposing a reputational incentive for our bioresources PC and the common flood risk PC.

### Criteria 5: Is there scope for outperformance?

Three of our PCs are set at a level that equates to perfect performance (in other words, 100% or zero failures). These are the CRI for drinking water quality, treatment works compliance and drought resilience. Rewards will not apply to these measures as there is no scope for outperformance. CRI, ERI, treatment works compliance and unplanned outage will be incentivised by penalty only to protect customers against underperformance. Drought resilience will have a reputational incentive. As we are in a strong water resource position in all of our operating areas, a financial penalty was not considered necessary to protect customers against drought resilience underperformance.



**Three of our PCs are set at a level that equates to perfect performance (in other words, 100% or zero failures).**

### Customer views on acceptable ODI range

Region	Research	Mean £ of bill	Mean % of bill	RoRE
Northumbrian	Service valuation research <sup>1</sup>	£18.17	4.66%	2.04%
	ODI research for bespoke measures <sup>2</sup>	£12.66	3.25%	1.42%
	Additional ODI research <sup>3</sup>	£19.61	5.03%	2.20%
Essex & Suffolk	Service valuation research <sup>1</sup>	£11.83	4.83%	2.11%
	ODI research for bespoke measures <sup>2</sup>	£7.97	3.25%	1.42%
	Additional ODI research <sup>3</sup>	£14.93	6.09%	2.67%

1. These are the values from the 'unconstrained' version of our service valuation tool, where our customers completed this first (ie unconstrained then constrained). The service valuation tool allowed our customers to choose the total amount to allocate to incentives.

2. These are values from our additional research for ODIs for bespoke PCs. This range should be viewed as additional to (1).

3. These values are from the additional email research on ODIs, with no upper limit on the amount that customers could select to allocate to incentives.

## 4.4 Developing the ODIs

continued

### Deadbands

A deadband is a margin on either side of a PC level where financial reward or penalty would not yet apply. They have advantages in that they mean that only clear improvements in performance are rewarded. Their purpose in part is to make sure that slight variations in performance do not result in a company facing penalties.

For 2020-25 we believe that it is important for companies to be incentivised to deliver small, as well as significant improvements for customers and disincentivised from allowing performance to deteriorate slightly or even to remain at a constant level.

Furthermore, our target levels for 2020-25 are so stretching that we believe any outperformance will warrant a reward.

Therefore, in general we do not propose to use deadbands. That said, there are three measures where we believe that deadbands are appropriate:

- The CRI is a new measure with limited historical performance data, volatility in performance levels and a target set at zero (100% compliance). As such we feel that a penalty deadband (amber area in graph) to the upper quartile position in 2024/25 is appropriate. Performing worse than this level will incur a penalty; and

### Ofwat IAP test areas

- EC** Engaging customers
- OC** Delivering outcomes for customers

- For treatment works compliance we propose a penalty deadband to 99% consistent with EPA and WISER objectives.
- Unplanned Outage is a new measure and due to the relative volatility of yearly performance we have set a small deadband. This allows time for this measure to gain more valuable historic data points on which performance can be measured

high or unlimited outperformance or underperformance payments on individual ODIs.

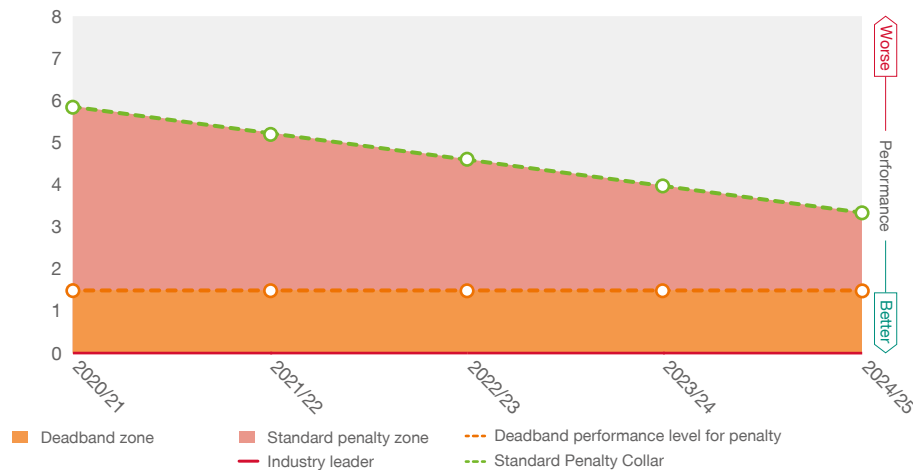
In order to protect customers from higher than expected rewards, for key PCs we have set caps and collars in line with our best case and worst case performance scenarios. These are set out in more detail in an Appendix to our IAP response. Specifically these have been applied to all PCs which account for >10% of the overall ODI range.

### Caps and collars

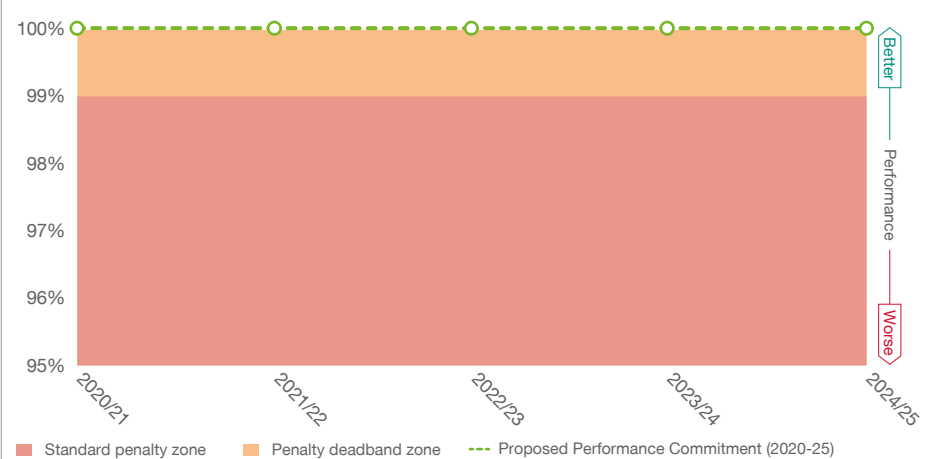
Companies are able to propose the use of outperformance caps and underperformance collars on individual ODIs. Caps allow companies to protect customers and companies from very

To further protect customers, should our total rewards for AMP7 exceed 2.04% of RoRE (the lowest level of customer support across all our relevant research), we will share any rewards above this threshold on a 50:50 basis with customers.

**COMPLIANCE RISK INDEX**  
CRI Index Score



**TREATMENT WORKS COMPLIANCE**  
Percentage penalty only



## 4.4 Developing the ODIs

continued

### How we have calculated incentive rates

We have calculated incentive rates to determine the level of our reward or penalty associated with one unit of improvement (or deterioration) of a particular PC. For example, for internal flooding a unit would be one internal flooding incident per 10,000 wastewater connections.

A rate of reward will apply to each internal flooding incident that we prevent or a penalty rate will apply to each incident above our target. The unit rates are based on the value that customers associate with delivering the service improvement and also the cost of delivering improvements.

**A** Full details on the calculation of incentive rates for each PC can be found in Appendix 4.3, and the results can be found in business plan table APP1

An Appendix to our IAP response sets out in more detail how we have triangulated a range of evidence to calculate appropriate incentive rates.

### When ODIs will be applied

For the 2015-20 period the majority of our incentives are applied at the end of the period through an adjustment to our regulatory capital value (RCV). This results in the reward being received (or penalty applied) over a period of around 17 years.

We believe it is important that penalties and rewards apply closer in time to the performance that generated them; this also provides a stronger incentive for companies. For the 2020-25 period we therefore propose that our incentives will apply in period as an adjustment to revenue. This means that the impact of good or poor performance will be more immediate, and will be factored into bills from 2022-23.

We will consider the affordability and volatility of bills when considering how to apply any ODI rewards or penalties. Should bill volatility prove a concern, we will consider deferring an ODI.

### Enhanced incentives

The concept of enhanced incentive rates was introduced for the 2020-25 period. An enhanced level of reward applies where service levels are improved beyond the current best industry level. Enhanced penalties also apply where there is very poor performance (ie performance that is poorer than the current lower quartile).

#### Ofwat IAP test areas

- Engaging customers
- Delivering outcomes for customers



**We propose a multiplier for enhanced rewards of x5, and enhanced penalties that are symmetrical with the enhanced rewards.**

The justification for enhanced rewards is that the whole industry (and therefore all customers) will ultimately benefit if an individual company sets new standards of performance, once the knowledge of the way in which this has been achieved is shared between companies. The result will be that future targets for all companies will be made more stretching.

To determine how much greater the enhanced incentive rates should be, we first determined the ratio of the number of customers we serve compared with the total number of customers served by all companies across the country. This results in multipliers of 21 for water and 20 for wastewater. If we are able to set a new standard of performance that will stretch the industry, it will therefore improve service for 20-21 times the number of people in our service area. For other companies, depending on their size, these multipliers would range from around 4 to around 200.

The fact that different water companies should have an overall package of ODIs with a similar range in terms of the potential percentage impact on customer bills (and percentage of Return on Regulated Equity (RoRE)), suggests that the enhanced rates should be similar for different companies.

We then examined what these multipliers would be if based on the largest company, as all companies could then follow that approach. This results in multipliers of 4 in wastewater and 6 in water.

We propose a multiplier for enhanced rewards of x5, and enhanced penalties that are symmetrical with the enhanced rewards.

Enhanced incentives will only apply for a small number of the common PCs as they rely on robust comparative data being available. Even if we deliver our best case outperformance, our expected rewards are still within the range that is acceptable to our customers.

The measures to which we will apply enhanced incentives are shown in the graphs below, along with the associated thresholds.

**A** Full details of our calculations for the thresholds can be found in Appendix 4.2

The Water Forums questioned the regulatory concept of enhanced incentives, believing that our customers should not have to pay for improvements that benefit other companies' customers. Their preference was therefore, for lower enhanced incentives.

In February 2019 we conducted further qualitative customer engagement relating to enhanced incentives. In summary 66% of customers supported a multiplier of x5, when this level of reward was viewed in the context of customer bills.

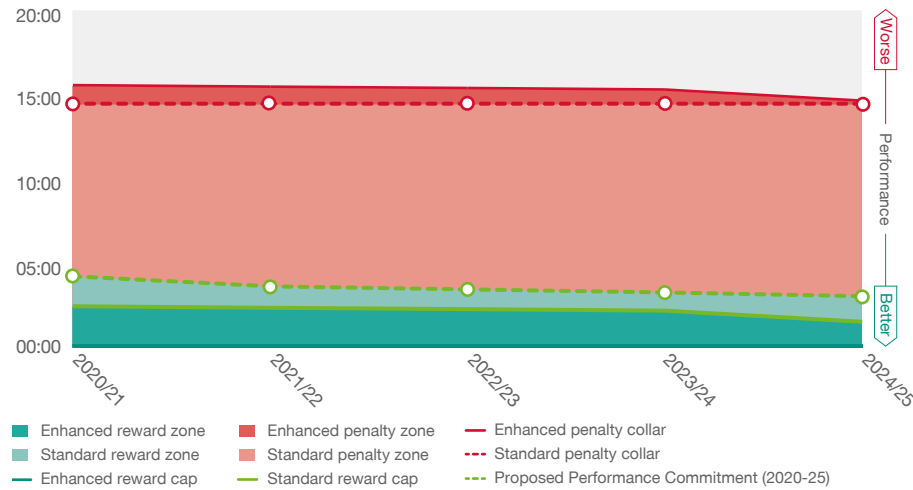
## 4.4 Developing the ODIs

continued

### Measures subject to enhanced incentive

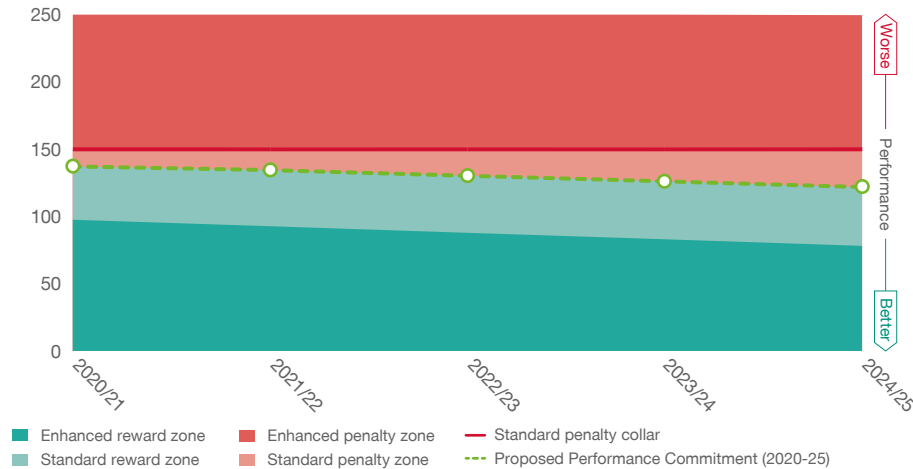
#### INTERRUPTIONS TO SUPPLY OVER 3 HOURS

MM:SS



#### LEAKAGE NW REGION

ML/day (no upper limit to enhanced penalty zone)

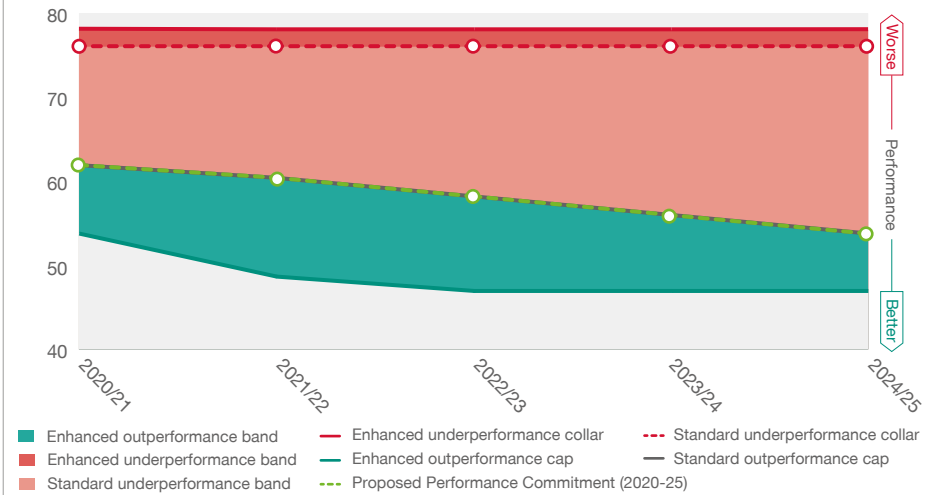


#### Ofwat IAP test areas

- EC** Engaging customers
- OC** Delivering outcomes for customers

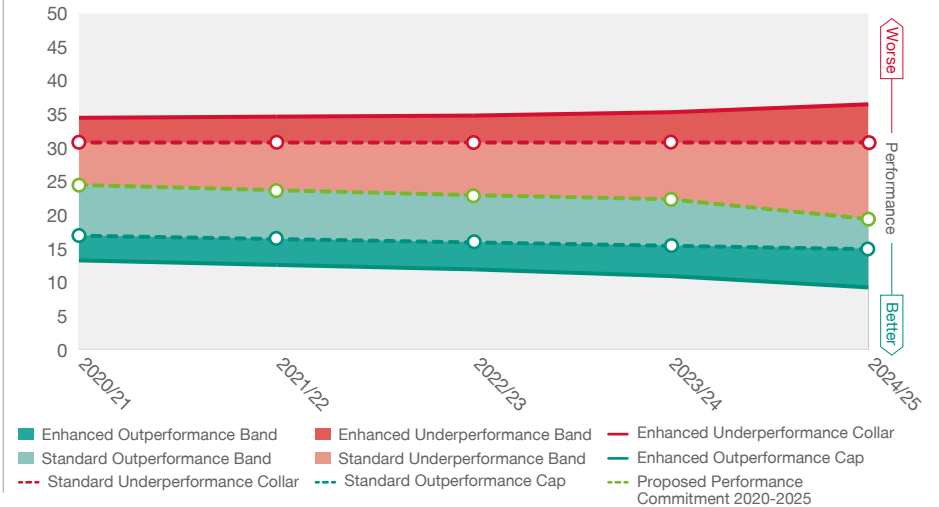
#### LEAKAGE ESW REGION

##### ML/day



#### CATEGORY 1-3 POLLUTION INCIDENTS WASTEWATER ONLY

##### (Number of pollutions per 10,000km of wastewater network)





## 4.4 Developing the ODIs

continued

### Overall range of incentives

It is important to understand the range of total ODI payments that are likely to apply in order to strike the right balance between:

- Strongly incentivising performance; and
- Ensuring that ODI payments, especially with regards to rewards, are within a range that is acceptable to customers.

Our understanding of the range of total ODIs that is acceptable to our customers comes from our customer engagement, which we outlined at the start of this section. A summary table is provided below.

To determine the range of total ODI payments that is likely to apply, we developed a best and worst case performance scenario for each PC.

By summing the rewards and penalties associated with best and worst case performance we arrive at an initial idea of the range for total ODI payments.

This range assumes that all the best case or worst case scenarios occur simultaneously, in every year, which in practice is extremely unlikely to occur.

We then refined the range using “Monte Carlo” analysis which allowed us to model thousands of potential performance scenarios across our package of measures. This analysis took account of the fact that performance on a number of measures was likely to correlate, for example could be triggered by the same type of weather event or asset failure. The result of this further analysis was to narrow our range of rewards and penalties.

The range of ODIs indicated by both pieces of analysis falls within the range that is acceptable to our customers.

In summary, we believe that our ODI proposals strike the right balance between strongly incentivising performance and falling within a financial range that is acceptable to customers. To ensure the latter is the case we have included C-Mex and D-Mex in the figures below.

#### Ofwat IAP test areas

- Engaging customers
- Delivering outcomes for customers



**In summary, we believe that our ODI proposals strike the right balance between strongly incentivising performance and falling within a financial range that is acceptable to customers.**

### RoRE range associated with ODIs

	RoRE range
Refined range based on Monte Carlo scenario analysis	-1.83% to 1.35%
Ofwat methodology	±1 – ±3%

## 4.5 Incentivising delivery of enhancements

### Summary of incentivised enhancements

This plan highlights a number of areas where enhancement funding will be used to deliver improvements for current and future customers. It is important that we are incentivised to deliver these enhancements, particularly in order to ensure that in each case customers are protected in the event of late or non-delivery of our proposal. The following table describes our approach.

Enhancement description	How does this link to our outcomes and PCs?	Definition of successful delivery in customer benefit terms	Target delivery date	How are customers protected in the event of late or non-delivery?	Where applicable, how is any adjustment or penalty calculated?
<b>Traffic Management Act</b>	Supporting local economies, also a link to average time to respond to visible leaks.	Customers will benefit from reduced commute delays/ congestion caused by our works in the highways and the control of costs impacting future bills by more effective work planning.	Mar-25	Permit schemes are enacted under the Traffic Management Act (TMA) for utility street works by local authorities in a number of parts of NWG's supply areas. These charges are mandatory. To determine the totex for this enhancement we have forecast the number of charges likely to apply in AMP7. If the actual number is different, we propose that a unit rate will be used to make an adjustment, at the end of the 2020-25 period.	At the end of 2020-25, based on the unit cost per permit contained in Appendix 3.2, and the actual volume incurred.
<b>Howdon STW</b>	Treatment Works Compliance, Pollution	926,000 current customers (plus future customers) will benefit from the provision of continuous wastewater service and a reduced risk of environmental impacts from future discharge volumes at Howdon.	Mar-25	"Customers will be protected in 2 ways: Firstly we are obliged to accommodate growth in order to fulfil our statutory duties outlined in the Water Industry Act 1991, we are also obliged to comply with our statutory discharge consents at Howdon. Failure to comply in either case would result in enforcement action. Secondly, given the scale of this enhancement, we are proposing a scheme specific performance commitment which will further protect customers against late delivery."	At the end of 2020-25, based on the unit rate as detailed in Appendix 3.2.

## 4.5 Incentivising delivery of enhancements

continued

### Summary of incentivised enhancements

continued

Enhancement description	How does this link to our outcomes and PCs?	Definition of successful delivery in customer benefit terms	Target delivery date	How are customers protected in the event of late or non-delivery?	Where applicable, how is any adjustment or penalty calculated?
WINEP	Treatment Works Compliance, CRI, Environment Strategy.	<ul style="list-style-type: none"> <li>- "Completion of the agreed WINEP program covering:</li> <li>- Wastewater - 5 environmental objectives made up of 21 separate programmes of work</li> <li>- Delivery of 34 investigations to meet obligations to EA and Natural England</li> <li>- Delivery of 3 schemes to ensure compliance against Natural Environment and Rural Communities (NERC) Act</li> <li>- Delivery of schemes at 8 sites to ensure compliance with Regulation on Invasive Species</li> <li>- Delivery of schemes at 5 sites to ensure compliance against the 2009 Eel Regulations</li> <li>- Number of drinking water catchments supported by catchment management partnerships or CaBA delivery groups by 2025 to increase from 4 to 9, to ensure compliance with DrWPA - Drinking Water Protected Areas.</li> </ul>	Mar-25	Any variations from the WINEP, not agreed via change protocol, would result in enforcement action being undertaken under the corresponding legislation. In particular the largest portion of the WINEP relates to wastewater, and we will be obliged to comply with tighter future discharge consents. Failure to do so would again result in enforcement action. A number of areas of the WINEP are currently uncertain, and a cost adjustment mechanism will be used to protect customers if requirements change.	WINEP cost adjustment mechanism
<b>Growth - Water</b>	CMEX, Interruptions > 12 hrs, CRI	We will deliver 33 growth schemes so that housing and economic growth across the company can be supported first time, upon the submission of the planning application and does not result in a reduced level of service for our existing long term customers.	Mar-25	We are obliged to accommodate growth in order to fulfil our statutory duties as outlined in the 1991 Water Industry Act. If actual growth differs from that forecast, an adjustment to the annual infrastructure charge will be made to account for under/over delivery.	Infrastructure charge adjustment.
<b>Growth - Wastewater Networks</b>	Flooding, Pollution	We will deliver a number of network schemes so that housing and economic growth across the company can be supported first time, upon the submission of the planning application and does not result in a reduced level of service for our existing long term customers.	Mar-25	We are obliged to accommodate growth in order to fulfil our statutory duties as outlined in the 1991 Water Industry Act. If actual growth differs from that forecast, an adjustment to the annual infrastructure charge will be made to account for under/over delivery.	Infrastructure charge adjustment.

## 4.5 Incentivising delivery of enhancements

continued

### Summary of incentivised enhancements

continued

Enhancement description	How does this link to our outcomes and PCs?	Definition of successful delivery in customer benefit terms	Target delivery date	How are customers protected in the event of late or non-delivery?	Where applicable, how is any adjustment or penalty calculated?
<b>Growth - Wastewater STWs</b>	Treatment Works Compliance	We will deliver 6 STW growth schemes (Howdon STW covered separately) so that housing and economic growth across the company can be supported first time, upon the submission of the planning application and does not result in a reduced level of service for our existing long term customers.	Mar-25	We are obliged to accommodate growth in order to fulfil our statutory duties as outlined in the 1991 Water Industry Act. If our proposed schemes are not required due to forecast growth not materialising, we will make a corresponding NPV neutral adjustment at the end of the period.	At the end of 2020-25, based on the cost per scheme contained in the Growth Enhancement Business Case
<b>Lead</b>	CRI	We will target and replace 3,730 lead communication and supply pipes.	Mar-25	This scheme is supported by DWI. A legal obligation will be placed on the company to deliver the scheme and routinely report progress.	At the end of 2020-25, based on the unit cost per replacement contained in Appendix 3.2, and the actual volume replaced.
<b>Metering Optants (inc +25% uplift and Whole Area Metering)</b>	Good value for money zero water poverty R&S	We will install 163,094 optant meters when requested to by customers or by choice over 5 years.	Mar-25	We are obliged under the 1991 Water Industry Act to install a meter when requested and cost beneficial to do so. To determine the totex for this enhancement we have forecast the number of meter optants in AMP7. If the actual number is different, we propose that a unit rate will be used to make an adjustment, at the end of the 2020-25 period.	At the end of 2020-25, based on the unit cost per replacement contained in Appendix 3.2, and the actual volume replaced.
<b>Metering Optants (SMART)</b>	Good value for money zero water poverty R&S	We will install 163,094 SMART optant meters when requested to by customers or by choice over 5 years.	Mar-25	To determine the totex for this enhancement we have forecast the number of meter optants requiring a smart meter in AMP7. If the actual number is different, we propose that a unit rate will be used to make an adjustment, at the end of the 2020-25 period.	At the end of 2020-25, based on the unit cost per replacement contained in Appendix 3.2, and the actual volume replaced.
<b>Metering (SMART element only on replacement meters)</b>	This links to our Good value for money zero water poverty R&S	We will replace 309,832 existing water meters with SMART meters between April 2020 to March 2025.	Mar-25	To determine the totex for this enhancement we have forecast the number of exiting meters which will be upgraded to smart in AMP7. If the actual number is different, we propose that a unit rate will be used to make an adjustment, at the end of the 2020-25 period.	At the end of 2020-25, based on the unit cost per replacement contained in Appendix 3.2, and the actual volume replaced.

## 4.5 Incentivising delivery of enhancements

continued

### Summary of incentivised enhancements

continued

Enhancement description	How does this link to our outcomes and PCs?	Definition of successful delivery in customer benefit terms	Target delivery date	How are customers protected in the event of late or non-delivery?	Where applicable, how is any adjustment or penalty calculated?
<b>Resilience - Water (Central)</b>	This links to our outcome for a reliable and sufficient supply of water, in particular measures for Interruptions to Supply >3 hrs and 12 hrs, also CRI and Taste & Odour performance.	100,000 customers will see improved security of supply from 12 hours to 3 days in the event of a failure or restriction at our treatment works or strategic main.	Mar-25	A scheme specific performance commitment will protect customers against late or non-delivery. This enhancement also links to a DWI commendation reference: NNE_ESK 3. DWI recognise by providing water storage, water quality impacts to customers can be mitigated or avoided.	As this enhancement targets a specific output by a date in the future, we will determine penalty on a per day late of delivery basis at the end of 2020-25. Appendix 3.2
<b>Resilience - Water (Tyne)</b>	This links to our outcome for a reliable and sufficient supply of water, in particular measures for Interruptions to Supply >3 hrs and 12 hrs.	43,000 customers will benefit from a secondary source of supply in the event of a failure of a strategic main.	Mar-25	A scheme specific performance commitment will protect customers against late or non-delivery.	As this enhancement targets a specific output by a date in the future, we will determine penalty on a per day late of delivery basis at the end of 2020-25. Appendix 3.2
<b>Resilience - Water (Tees)</b>	This links to our outcome for a reliable and sufficient supply of water, in particular measures for Interruptions to Supply >3 hrs and 12 hrs, also CRI and Taste & Odour performance.	250,000 customers will benefit from a reduction in risk of a water quality/ loss of supply event and will be able to be supplied from 2 supply sources and 98,000 customers will benefit from a secondary point of supply in the event of a failure of a strategic main.	Mar-25	A scheme specific performance commitment will protect customers against late or non-delivery. This enhancement also links to a DWI scheme reference: NNE_ESK 4 – Tees Discolouration; DWI intends to issue a Notice under Regulation 28(4) of the Water Supply (Water Quality) Regulations 2016, as amended, that requires the Company to mitigate the risk of manganese and iron, that has been identified as a potential danger to human health from the water supplied from Lartington WTW. This is a driver for the 37km mains replacement scheme. Also supports DWI Scheme reference: NNE_ESK 2 – Multiple Sites - Discolouration. Failure to deliver will result in DWI enforcement.	As this enhancement targets a specific output by a date in the future, we will determine penalty on a per day late of delivery basis at the end of 2020-25. Appendix 3.2
<b>Resilience - Water (Essex)</b>	This links to our outcome for a reliable and sufficient supply of water, in particular measures for Interruptions to Supply >3 hrs and 12 hrs, also CRI and Taste & Odour performance.	421,000 customers will benefit from a second raw water supply and a reduction in risk of a water quality / loss of supply event in the event of water quality changes or resource restrictions and 110,000 customers will benefit from a secondary source of supply in the event of a failure of a strategic main.	Mar-25	A scheme specific performance commitment will protect customers against late or non-delivery.	As this enhancement targets a specific output by a date in the future, we will determine penalty on a per day late of delivery basis at the end of 2020-25. Appendix 3.2

## 4.5 Incentivising delivery of enhancements

continued

### Summary of incentivised enhancements

continued

Enhancement description	How does this link to our outcomes and PCs?	Definition of successful delivery in customer benefit terms	Target delivery date	How are customers protected in the event of late or non-delivery?	Where applicable, how is any adjustment or penalty calculated?
<b>Resilience - Water (Suffolk)</b>	This links to our outcome for a reliable and sufficient supply of water, in particular measures for Interruptions to Supply >3 hrs and 12 hrs.	90,000 properties in Great Yarmouth, Lowestoft and North Suffolk will have an alternative source of supply in the event of failure of one of the three major treatment works supplying this area.	Mar-25	A scheme specific performance commitment will protect customers against late or non-delivery.	As this enhancement targets a specific output by a date in the future, we will determine penalty on a per day late of delivery basis at the end of 2020-25. Appendix 3.2
<b>Resilience - Water (Too Critical to Fail sites)</b>	Interruptions to Supply >3hrs and 12hrs, CRI, Discolouration	942,000 customers will benefit from an increase in current base resilience, measured using a resilience metric against natural and man made hazards at 63 critical sites. Current base resilience is 0.74 and by implementing our plan will move this to 0.93.	Mar-25	A scheme specific performance commitment will protect customers against late or non-delivery.	As this enhancement targets a specific output by a date in the future, we will determine penalty on a per day late of delivery basis at the end of 2020-25. Appendix 3.2
<b>Resilience - Wastewater (Network Resilience)</b>	Flooding, Pollution, Treatment Works Compliance	96 properties will benefit from reduced sewer flooding risk from a 1in50 yr event and a number of hydraulic studies will be carried out to identify and confirm risk.	Mar-25	A scheme specific performance commitment will protect customers against late or non-delivery.	At the end of 2020-25, based on the unit rate or time rate as detailed in Appendix 3.2.
<b>Resilience - Wastewater (Too Critical To Fail Assets)</b>	Flooding, Pollution, Treatment Works Compliance.	2.1 m customers will benefit from an increase in current resilience of their wastewater service against natural and man made hazards at 183 critical sites (assuming each site has at least one scheme implemented but some will be more).	Mar-25	A scheme specific performance commitment will protect customers against late or non-delivery.	At the end of 2020-25, based on the unit rate as detailed in Appendix 3.2.
<b>Resilience - Wastewater (Reduce Flooding Risk for Properties in the Future)</b>	Bespoke PC for flood risk reduction	7,400 customers will benefit from a reduction in flood risk.	Mar-25	A PC level has been set at 7400 consistent with the level of enhancement funding. An ODI will apply to under delivery.	Penalty as detailed in table APP1.

## 4.5 Incentivising delivery of enhancements

continued

### Summary of incentivised enhancements

continued

Enhancement description	How does this link to our outcomes and PCs?	Definition of successful delivery in customer benefit terms	Target delivery date	How are customers protected in the event of late or non-delivery?	Where applicable, how is any adjustment or penalty calculated?
<b>Non-SEMD : Cyber</b>	Potential to impact a number of performance commitments depending upon the nature of the cyber attack which has been avoided.	Compliance with two directives; NIS-D and GDPR in order to minimise disruption to customers as a result of malicious third party activity on our IT/OT operating systems. This will be validated by an independent (3rd party) assessment of NW cyber capability at start and end of AMP7 to quantify customer benefit v the overall investment in cyber security between 2020-2025.	Mar-25	Scheme progress will be tracked, compliance with NIS-D will be reported to the regulator.	As this enhancement targets improvements by 31/03/2025, we will determine penalty on a per day late of delivery basis at the end of 2020-25. Appendix 3.2
<b>SEMD</b>	Potentially links to any measure depending on the nature of the threat being protected against.	Delivery of 4 security and 4 emergency planning control schemes that will indirectly benefit all customers	Mar-25	We are obliged to deliver these schemes to ensure compliance with the SEMD and operator licence conditions. Failure to do so would result in enforcement action.	

# 5.0

# PRICE CONTROLS AND CUSTOMERS' BILLS

- [5.1 Overview](#)
- [5.2 Factors driving the changes in bills](#)
- [5.3 Bill profile over time: smoothed and unsmoothed](#)
- [5.4 Setting the five individual price controls](#)
- [5.5 Setting prices for water resources](#)
- [5.6 Setting prices for water network plus](#)
- [5.7 Setting prices for bioresources](#)
- [5.8 Setting prices for wastewater network plus](#)
- [5.9 Setting prices for household retail](#)
- [5.10 Developer services charges](#)
- [5.11 Bills beyond 2025](#)

In the section we set out the price controls that are proposed as part of the overall package the plan delivers. We explain the key drivers for each control, how this determines the allowed revenue we are able to raise and what this means for bills that customers pay. Our proposals pass on the benefits of efficiency gains and of lower returns, and result in a significant and sustainable reduction in bills.



## 5.1 Overview

In its methodology, Ofwat explained that it would be setting a number of separate price controls in order to create a spur to further efficiency by providing a greater focus on disaggregated cost data and enabling more specific cost comparisons to be made across the sector. In the case of bioresources and water resources the separate controls – along with other measures such as more transparent publication of market information – will help to facilitate the creation of new markets. We consider this further in Section 6: Harnessing markets.

This section sets out the five separate price controls covering the following services across the value chain:

- Water resources;
- Network plus water;
- Bioresources;
- Network plus wastewater; and
- Household retail services.

We also cover developer services charges.

As we have exited from the non-household retail market, these services are not included within our plan.

### Ofwat IAP test areas



**We have reflected customers' preferences in proposing a significant reduction in bills in 2020, followed by below inflation increases each year up to 2024/25.**

### Engaging customers on bills

In consulting our customers we have focused on what our plan means for the overall bill for each of the water and sewerage services. We have been careful to consider customers who only receive one or other service, including in particular the 1.7m ESW customers who only receive water services from NWL.

The bills that customers receive do not currently separately itemise the water resources, network plus or retail components. They may not recognise the service they receive as comprising these different elements. Nevertheless, we have been able to attribute the outcome of customer engagement to specific price controls.

For example, our water network plus price control reflects customers' strong views on leakage. Similarly, our retail price control incorporates customer support for delivering an unrivalled customer experience and for providing additional help for those customers who may need it.

As part of the process of developing our plans for each service, we engaged with potential new entrants and competitors in each of those markets. This included seeking the views of our non-household retailers about our wholesale services.

**53** This engagement is covered in more detail in Section 3.1

### Delivering exceptional service with significant reductions in bills

We discussed affordability issues with our customers in 2017 as part of the process of developing our plan. Customers told us that they wanted stable bills and, in particular, wished to avoid sharp increases in bills in any year as these are difficult to budget for. These findings are consistent with a wide range of other studies into customer preferences (Resilience, Asset Health and Longterm Affordability, 2017).

We have reflected customers' preferences in proposing a significant reduction in bills in 2020, followed by below inflation increases each year up to 2024/25. The initial price reduction is greater in wastewater than in water. This is largely because the level of outperformance has been greater in wastewater, so there are more efficiencies to be passed on to customers.

In setting this bill profile we have sought to reduce bills as far as possible in 2020, passing back efficiency gains and lower returns without delay. We have however been mindful of the need to avoid increasing bills in future years. Reducing bills too far in 2020 could result in bills having to rise in subsequent years.

We have tried to achieve an outcome in 2025 that is balanced and does not require a significant movement in bills. In other words we have aimed to achieve a sustainable position. We are proposing below inflation increases each year from 2020-25.

### How ODIs may affect bills

If we are successful in delivering ambitious performance improvements and outperforming our PCs, then bills will need to increase from 2022/23 due to the receipt of performance-related incentive payments. Equally, should we fail to meet our PCs then bills will fall further as a result of financial penalties being applied (before inflation).

## 5.1 Overview

### continued

If we assume that our performance remains stable there will be no further significant impact of rewards or penalties in 2023/24 or 2024/25. This is because once the initial reward (or penalty) is applied in 2022/23, a continuation of this overall performance will mean the same reward (or penalty) being applied in future years. As such any annual bill movements will only be caused by changes in performance.

Given the significant planned reduction in bills, we are confident that even if we factor in ODI payments based on outstanding performance, customers will still face significantly reduced bills (before inflation) in 2024/25 relative to 2019/20.

Assuming 2% pa inflation, water bills would be very similar in nominal terms (that is, including inflation) in 2024/25 even allowing for ODI rewards at the higher end of the proposed RoRE range. Wastewater bills are likely to be lower in 2024/25 on a similar basis.

We are aware that many customers in our areas experience difficulties paying their water bills; for this reason we have set ourselves an ambitious goal to eradicate water poverty by 2030. Our bill reductions alone will improve affordability in our regions by around 2%, helping to move more than 35,000 customers out of water poverty.

We are proposing bill reductions as follows:

Excludes inflation	2020/21	2021/22	2022/23	2023/24	2024/25	Total
<b>Northumbrian Water bills</b>						
Water	-12.6%	-0.3%	-0.3%	-0.3%	-0.3%	<b>-13.7%</b>
Wastewater	-12.6%	-1.4%	-1.4%	-1.4%	-1.4%	<b>-17.3%</b>
<b>Combined</b>	-12.6%	-0.9%	-0.9%	-0.9%	-0.9%	<b>-15.7%</b>
<b>Essex &amp; Suffolk Water bills</b>	-12.6%	-0.3%	-0.3%	-0.3%	-0.3%	<b>-13.7%</b>

The average household bill profile, after smoothing, is shown below:

£, excludes inflation	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25
<b>Northumbrian Water bills</b>						
North Water	179	156	156	156	155	155
North Sewer	218	191	188	185	183	180
<b>North Combined</b>	397	347	344	341	338	335
		<b>-12.6%</b>	<b>-0.9%</b>	<b>-0.9%</b>	<b>-0.9%</b>	<b>-0.9%</b>
<b>South Water</b>	249	218	217	216	216	215
		<b>-12.6%</b>	<b>-0.3%</b>	<b>-0.3%</b>	<b>-0.3%</b>	<b>-0.3%</b>

#### Ofwat IAP test areas



Targeted controls, markets and innovation

## 5.2 Factors driving the changes in bills

### Factors driving the changes in bills

The table below shows the main drivers of movements in the NW combined bill and ESW water bill. This is followed by commentary that considers each of the individual factors:

Derived from waterfall model	North combined	ESW water
2017/18 year average CPIH deflated	£ per customer	£ per customer
<b>2019-20 bill</b>	<b>397</b>	<b>249</b>
Changes between 2019/20 and 2024/25		
Change in RCV	16	9
Change in RCV run off	2	1
Change in WACC	(14)	(7)
Change in customer numbers	(2)	(1)
Change in totex	20	11
Change in PAYG rate	(47)	(25)
Change in other wholesale items	(22)	(12)
Change in retail CTS	(6)	(3)
Change in reconciliation items	(9)	(5)
<b>2024-25 bill</b>	<b>335</b>	<b>215</b>
<b>Reduction</b>	<b>-16%</b>	<b>-14%</b>

As the price controls are set as revenue controls, the K factors (adjustments to revenue) will be different from the bill changes, as these are affected by customer numbers.

**A** We have set out more details in Appendix 5.1.

## 5.2 Factors driving the changes in bills

continued

### Change in RCV

The increase represents the impact on bills of the increase in the RCV over 2020-25. This is largely driven by the large enhancement totex programme.

### Change in RCV run-off (depreciation)

The low level of impact reflects the fact that we have set the run-off rate at a similar level to that used in PR14. There is this little transition impact for customers.

### Change in WACC (return on capital)

We have used Ofwat's preliminary estimate of the appropriate return throughout our plan. We have not sought to vary allowed returns across any of the wholesale controls; this is also in line with Ofwat's guidance. The reduction in the cost of capital, from 3.6% to 2.8% (mixed RPI/CPIH) is a significant driver of bill reductions, resulting in a bill reduction of around 4% (once the impact of lower taxation on returns is included).

### Change in customer numbers

The small decrease is due to the decrease in household apportionment of total revenues in the waterfall model.

### Change in totex

The increase is due to the higher overall level of totex in 2020-25 compared to 2015-20. This increase would be lower were the PAYG rate anomaly below corrected for.

#### Ofwat IAP test areas

Targeted controls, markets and innovation

### Change in PAYG rate

**254** We define the natural rate in Section 8.2 of our plan.

We have adopted the natural rate for PAYG in our plan in order to avoid creating issues of intergenerational equity through advancing or deferring revenues. Despite this, Ofwat's waterfall model allocates a large value to changes in the PAYG rate. We believe this value is overstated, for the reasons set out below.

The impact of higher totex on the PAYG rate is not accounted for by the model. We estimate that were the model to be adjusted for this, the PAYG impact would reduce by a third. The waterfall model is a pro rata model, so making this adjustment would simply reallocate this variance to other categories with no impact on the total movement or closing average bills.

The waterfall model uses the 2019/20 PAYG rate for the starting position. It is important to note that the 2019/20 PAYG rate was above the natural rate. The PR14 FD shows that, for both services, the PAYG rate peaked in 2019/20. This was due to the decision made at PR14 to set the PAYG rate to deliver flat bills across 2015/16 to 2019/20. While the average PAYG rate over 2015-20 was set at around the natural rate, the 2019/20 rates were higher than this. Therefore around half of the reduction shown in the waterfall model is due to the move from a 2019/20 PAYG rate which was above the natural rate to the natural rate in 2020/21.

We have challenged ourselves to achieve upper quartile efficiency in each price control.

The remaining PAYG reduction reflects greater totex efficiency, particularly for the wastewater service. When we combine this with the efficiencies passed on through the lower retail costs, the bill reduction for Northumbrian customers is around 5%.

### Change in other wholesale items

The majority of the Change in other wholesale items is due to lower taxation as a result of lower tax rates.

Other factors are the reduced taxation on lower return on capital and lower reconciliation items revenue.

### Change in retail CTS

The bill reductions reflect the significant household retail efficiencies delivered over 2015-20 compared to the original FD.

### Change in reconciliation items (Legacy adjustments)

The ending of the PR14 reconciliation items is also significant. At PR14, NWL received income for reconciling 2010-15 performance. This primarily related to Revenue Correction Mechanism income, which from 2020 onwards will no longer be applicable. The bill reduction as a result is around 4%.

### Smoothing

We have added the impact of bill smoothing as a negative figure in 2024/25. The nature of bill smoothing is that there is a combination of upwards and downwards movements over 2020-25 to the unsmoothed bills that net off in NPV terms, but in 2024/25 the adjustment from the unsmoothed values is downwards.

#### Additional note:

### Efficiency assumptions (2020-25)

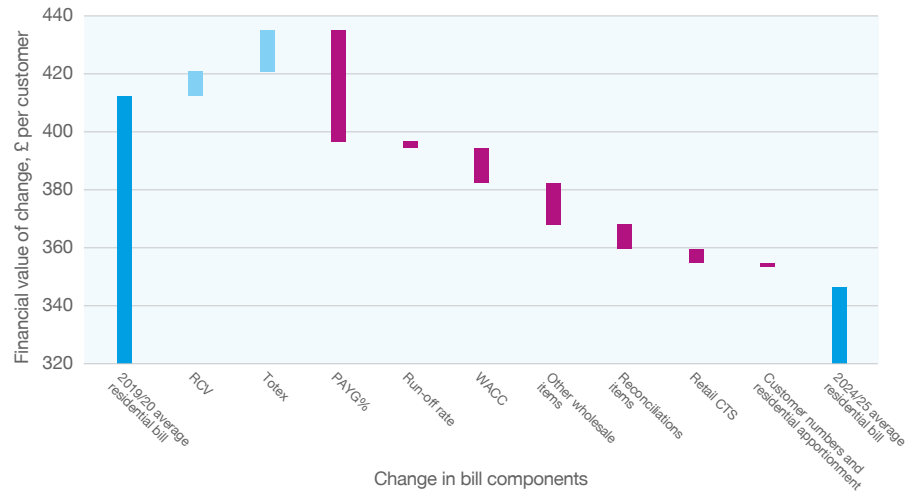
We have challenged ourselves to achieve upper quartile efficiency in each price control and set our 2020/21 costs on this basis.

We have then assumed a stretching 1.5% annual frontier efficiency target for base modelled costs and 1% for enhancement costs.

These assumptions have been applied to each price control to ensure that we remain at least upper quartile efficiency at the end of the period. This is reflected in the totex numbers. Our efficiency assumptions suggest that bills would be 2% higher than we propose were these efficiencies not applied. These efficiencies are effectively netted off the totex increase shown in the waterfall model.

## 5.2 Factors driving the changes in bills continued

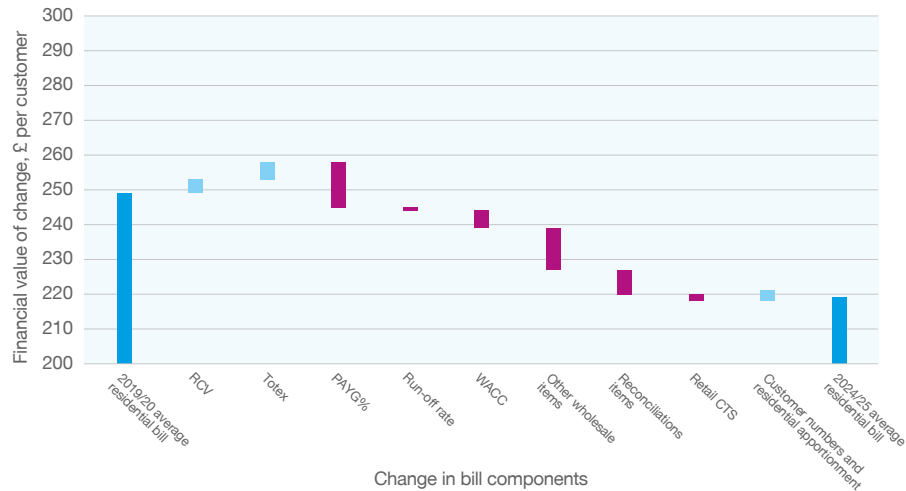
**NORTHERN COMBINED BILL MOVEMENT BETWEEN PR14 AND PR19**



Ofwat IAP test areas

**CMI** Targeted controls, markets and innovation

**ESSEX & SUFFOLK BILL MOVEMENT BETWEEN PR14 AND PR19**

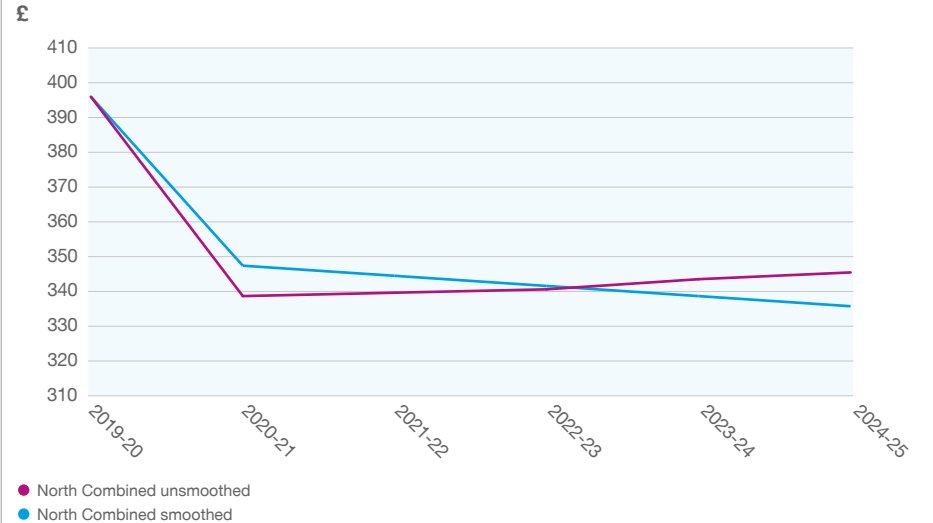


## 5.3 Bill profile over time: smoothed and unsmoothed

We have set out the unsmoothed bill profile based on annual allowed revenue calculations and also our proposed smoothed profile calculated using the NPV neutral tool in the financial model.

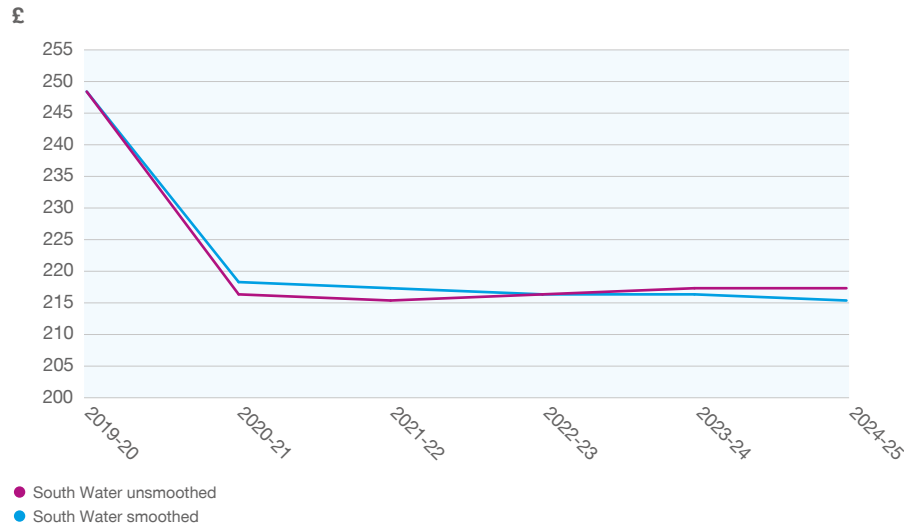
We have set bill reductions of 12.6% for our water and wastewater customers for year 1, and have allocated the remainder in an NPV smoothed basis over years 2-5. Therefore, every year should see real terms bill reductions.

**NORTH COMBINED HOUSEHOLD BILL: SMOOTHED AND UNSMOOTHED**



### 5.3 Bill profile over time: smoothed and unsmoothed continued

ESSEX & SUFFOLK HOUSEHOLD BILL: SMOOTHED AND UNSMOOTHED



Ofwat IAP test areas

**CMI** Targeted controls, markets and innovation

### 5.4 Setting the five individual price controls

The average bill data discussed above reflects the combined impact of the individual price controls. The tables in the individual price controls section show the allowed revenue and annual percentage change in revenue for each control separately. The data is extracted from the executive summary of the financial model. We have added 2019/20 data to show the reductions in 2020/21.

There are real price reductions in each price control so all of our customers will experience bill reductions in 2020/21, regardless of which services they receive.

In the following section, we set out the revenue profile for each of the controls along with a description of the main factors driving the evolution of each individual price control. More details on the building block breakdowns and other financial metrics can be found in the technical appendices for each separate price control.

**A** See Appendix 5.1

### Allocating costs and the RCV to the wholesale controls

In developing our plan we have allocated our costs including our assets and the RCV in line with Ofwat's guidance (RAG 4.06 and its guidance of RCV allocation). We commissioned Economic Insight to assure our RCV allocations and PwC has provided assurance on the data including the data tables.

Full details are provided in tables Ws12, WWs12 and Ws12a and the associated commentary on our proposed RCV allocations.

**A** See Appendix 5.2

**A** See Appendix 5.3

## 5.4 Setting the five individual price controls continued

We have allocated each of our ODIs to price controls. This provides clarity in the event of penalties and rewards resulting from outperformance or underperformance, where the impact on bills would be assessed in proportion to the percentage allocation. Most ODIs relate to one price control but some span more than one control. The allocations can be found in the table below, and more detail can be found in business plan table APP1.

**A** See Appendix 2

Performance Commitment	Percentage allocated to each price control				
	Water resources	Water network plus	Wastewater network plus	Bioresources (sludge)	Household retail
Customer measure of experience (C-MeX)					100.0%
Developer services measure of experience (D-MeX)		63.5%	36.5%		
Water quality compliance (CRI)		100.0%			
Water Supply Interruptions: Over 3 Hours		100.0%			
Leakage (NWL)		100.0%			
Leakage (ESW)		100.0%			
Per capita consumption (PCC)		100.0%			
Internal sewer flooding			100.0%		
Pollution incidents			100.0%		
Risk of severe restrictions in a drought	100.0%				
Risk of sewer flooding in a storm			100.0%		
Mains bursts		100.0%			
Unplanned outage		100.0%			
Sewer collapses			100.0%		
Treatment works compliance		16.0%	84.0%		
C-Sat of customers who receive additional support					100.0%
Awareness of additional support					100.0%
Response to complaints					100.0%
Visible leaks		100.0%			
Customers' perception of trust					100.0%



**We have clearly allocated each of our ODIs across the price controls.**

Performance Commitment	Percentage allocated to each price control				
	Water resources	Water network plus	Wastewater network plus	Bioresources (sludge)	Household retail
Percentage of households in water poverty					100.0%
Non-household Gap Sites		57.0%	43.0%		
Percentage of void household properties					100.0%
Interruptions to supply more than 12 hours		100.0%			
Sewer flooding risk reduction			100%		
Discoloured water contacts		100.0%			
Taste and smell contacts		100.0%			
Event Risk Index (ERI)		100.0%			
Interruptions to supply: 1 – 3 hours		100.0%			
Sewer blockages			100.0%		
External sewer flooding			100.0%		
Repeat sewer flooding			100.0%		
Abstraction incentive mechanism (AIM)	100.0%				
Bathing Water Quality			100.0%		
Length of water environment improved	12.2%	50.1%	37.7%		
Greenhouse Gas Emissions	11.0%	44.9%	33.8%	2.9%	7.4%
Percentage of Biosolids Treated by AAD & Beneficially Recycled to Land				100.0%	
Delivery of water resilience enhanced programme		100.0%			
Delivery of lead enhancement programme		100.0%			
Delivery of smart metering enhancement programme		100.0%			
Delivery of wastewater resilience enhancement programme			100.0%		
Delivery of cyber resilience enhancement programme	11.0%	44.9%	33.8%	2.9%	7.4%
Delivery of Howdon STW enhancement			100.0%		

## 5.5 Setting prices for water resources

£m, 2017/18 prices CPIH deflated	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25
Water Resources allowed revenues	89.4	78.1	78.4	78.6	78.9	79.1
Change in revenues		-12.7%	0.4%	0.3%	0.3%	0.3%

When we spoke to customers, they told us that improving the environment and delivering reliable and resilient services was important to them.

We have developed some key themes around these areas.

Our water resources expenditure is driven principally by the ongoing maintenance of our assets as well as managing our water supplies and interactions with the natural environment.

Key investments in this control include the expansion of our catchment management activities and measures to improve access to the water environment for our customers. Around £16m of investment in the water resources control is driven by WINEP requirements to meet the requirements of the WFD.

We have set ourselves a stretching efficiency target to ensure that our costs are in line with our estimate of the upper quartile benchmark.

We have included an incentive payment of £7.1m spread over 2020-25 for a significant long-term water trade with Thames Water. This 20 Ml/d trade is the largest in the industry since privatisation. More information is provided in the table commentary for Ws17 and our separate water trade report.

Incentive rewards and penalties would be applied to these allowed revenues based on our performance against the commitments set out in Section 3 that relate to water resources such as our commitment to improve the water environment and the AIM.

### Ofwat IAP test areas

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### RCV allocation to the water resources control

We have responded to Ofwat's feedback on our initial water resources RCV allocations including removing the IFRS adjustment. This has a relatively minor impact on the proportion of RCV that is allocated to water resources because the IFRS adjustment had been applied to both water resources and water network plus assets.

We have updated the allocations for forecast expenditure and for indexation to 2017-18 prices. Our allocations use a net MEAV approach, which we consider is most appropriate, although we also carried out a cross-check using a gross MEAV approach.

We considered the impact of the water RCV allocations on all of our customers, including our customers who receive non-potable tariffs. We intend to continue to set these tariffs at a fixed discount on our potable tariffs, so that customers who receive non-potable services receive the same bill reduction as our other customers.

We note that the proportion of RCV that is allocated to water resources is higher than it is for some other companies. This reflects the high level of investment in both of our operating areas.

## 5.6 Setting prices for water network plus

£m, 2017/18 prices CPIH deflated	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25
Water Network + allowed revenues	355.4	313.3	312.0	311.4	310.6	310.4
Change in revenues		-11.8%	-0.4%	-0.2%	-0.3%	-0.1%

Our engagement with customers emphasised the importance of us delivering resilient and reliable services – a key theme of our overall plan. This translates into the water network plus control with measures such as supply interruptions, leakage, mains bursts and water quality all being identified as important by customers.

Our water network expenditure is driven principally by investments to maintain and improve the resilience of the network and our ongoing maintenance and operation of the network. The themes and categories for water service enhancements include WINEP, meeting lead standards, growth, resilience, metering, meeting the security emergency measures directive and the lane rental requirements of the Traffic Management Act.

Total proposed enhancement to totex amounts to £352m. The major areas are resilience at £129m, growth at £87m and metering at £43m, raw water deterioration at £35m and other categories at less than £20m each. This investment will be achieved alongside bills reducing by more than 12% during the asset management plan period before the application of any rewards for outperformance.

Key activities in 2020-25 include investments to deliver improvements at sites we identified as 'too critical to fail' and improving the connectivity of the network. There will also be a modest increase in our replacement rate of mains to deliver reductions to mains bursts and leakage. Investments are included for targeted replacement of lead pipes in 'hot spot' areas to improve drinking water quality and to address taste and odour. These investments were strongly supported by our customers.

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Other adjustments are made up of capital contributions from developers for new connections and infrastructure charges of approximately £10m per year. There is an £6m PR14 reconciliation adjustment in 2020-21 comprising £10m for a totex efficiency model adjustment, £4m for a PR09 true up adjustment and a reduction of £8m for a revenue adjustment.

Incentive rewards and penalties would be applied to these allowed revenues based on our performance against the commitments set out in Section 3 that relate to water network activities. These include drinking water quality and taste and odour, leakage, supply interruptions, mains bursts and unplanned outages of water treatment works.



## 5.7 Setting prices for bioresources

£m, 2017/18 prices CPIH deflated	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25
Bioresources - allowed revenues	28.8	21.8	21.8	21.9	21.9	21.9
Change in revenues		-24.4%	0.1%	0.2%	0.1%	0.1%

Our forecast expenditure is very stable with no major investments planned. Our costs are already at the efficiency frontier.

We are active members of the Biosolids Assurance Scheme, which allows the sector to demonstrate a quality-assured process and product.

Bioresources price controls will be set as average revenue price controls based on tonnes of dry solids (TDS). We provided a forecast of TDS in our business plan tables.

Ofwat has introduced the Forecasting Accuracy Incentive. This means a penalty will be applied to the difference between actual and forecast sludge production when the variation is greater than  $\pm 6\%$ . This symmetrical penalty will be 10% of the standard average revenue, applied to the difference between forecast and actual sludge volumes, with no cap or collar on allowed revenues.

We currently measure sludge production at a number of points in the sludge chain as part of our integrated sludge movement planning and scheduling system.

Our major STWs, along with our sludge handling centres and sludge treatment centres, are equipped with level, flow, weight and dry solids measurement devices to provide just-in-time information. We also carry out extensive operational measurements using bench dry solids analysers backed up with regular laboratory sampling and analysis. We will build on this strong position in accurately measuring our actual sludge volumes under the new price control.

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Incentive rewards and penalties would be applied to these allowed revenues based on our performance against the commitments set out in Section 3 that relate to bioresources which are “percentage satisfactory sludge disposal” and a bespoke measure we have developed for bioresources, which is “% of sludge treated through AD and beneficially recycled as a fertiliser product”.

### RCV allocation

We have fully considered Ofwat’s feedback on the bioresources RCV allocation. Our allocations are within the quoted industry ranges. We remain of the view that our current processes reflect the efficient hypothetical assets.

## 5.8 Setting prices for wastewater network plus

£m, 2017/18 prices CPIH deflated	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25
Wastewater network – allowed revenues	288.8	240.0	238.1	236.4	234.6	232.7
Change in revenues		-16.9%	-0.8%	-0.7%	-0.8%	-0.8%

Our customers have told us that improving the environment and delivering reliable and resilient services is important to them and we have developed our plan in response to this feedback. Customers emphasised the importance of reducing sewer flooding and the Water Forums have encouraged us to retain our PC around reducing repeat flooding.

Our wastewater network capital expenditure is increasing over the 2020-25 period, despite our significant efficiency ambitions. Our wastewater network expenditure is driven principally by ongoing maintenance and operations of the network, investments to maintain and improve resilience, WINEP and to meet growth projects. More specifically the plan includes:

- Operations to meet the WFD requirements and to deliver 451km of river length improvements;
- £200m of investment to improve resilience and reduce our dependence on critical assets;

- £103m to support growth in the regions we serve and the upgrading of our network and treatment assets; and
- £187m WINEP programme of environmental improvements, which includes £174m attributed to the wastewater plus control.

Other adjustments are made up of a £5m PR14 totex efficiency reconciliation adjustment in 2020/21 along with £6m annual capital contributions from connection charges and revenue from infrastructure charges.

Incentive rewards and penalties would be applied to these allowed revenues based on our performance against the commitments set out in Section 3 that relate to wastewater networks. These commitments include pollution incidents, sewer collapses, treatment works compliance, sewer flooding, repeat sewer flooding and sewer blockages.

### Ofwat IAP test areas



## 5.9 Setting prices for household retail

£m, 2017/18 prices CPIH deflated	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25
Household retail service revenue	60.6	56.7	56.9	56.5	56.1	55.7
Change in revenues		-6.3%	0.2%	-0.7%	-0.7%	-0.7%

We have set out a clear ambition in our plan to deliver an unrivalled customer experience. We have also set ambitious targets to reduce water poverty and increase support to our customers who need it.

During the current price control period we have invested in a new billing and customer care system that is helping to improve the level of service our customers experience. In the 2020-25 period we intend to take forward our 'Think digital' transformation programme, which will contribute to our providing an unrivalled customer experience.

Our forecast costs reflect ongoing efficiency, with investments such as Think Digital being self-funding.

We have used a 1% retail margin in line with the Ofwat methodology.

Incentive rewards and penalties would be applied to these allowed revenues based on our performance against the commitments set out in Section 3.

Household retail price controls will be set as weighted average revenue price controls based on the number of customers served by different customer type (if there are differences in the costs of serving those different types). The customer types are based on whether the customer is measured or unmeasured and whether the customer receives a dual or single service.

The revenue in the table is taken from Ofwat's financial model, which deflates outturn costs by CPIH. In calculating our outturn costs, we applied the input price pressures adjustments that were assessed by Economic Insight (and which were included in Table App24a).

## 5.10 Developer services charges

Developer service charges are an important component of overall regulated income. This income is included in the relevant wholesale price controls. However, the requirement for cost recovery and transparency of charges means that new development can be viewed as almost a separate shadow price control.

The approach we have adopted is to set developer services revenue to recover forecast new development costs. We intend to rebalance charges as necessary to maintain this cost reflectivity as we progress through the control period. This should minimise any cross subsidies between developers and other customers. The level of new development depends on the state of the economy and the housing market. A dynamic approach to cost reflective charging ensures a fair balance between developers and other customers.

The Ofwat requirement for companies to reconcile infrastructure charge receipts to infrastructure network reinforcement expenditure over five years is a clear and helpful example of this that we have reflected in our plan.

We have lowered our infrastructure charges for 2018/19 to reflect our forecast costs, which has been welcomed by developers. We have also introduced discounts to our standard infrastructure charges to incentivise developers to demonstrate water efficient developments and ensure that surface water is separated from foul flows and discharged away from existing sewers using SUDS or similar approaches.

Our new development costs are typically driven by our forecasts of new properties connected, which in turn are in line with our water resources management plan forecasts.

### Ofwat IAP test areas

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Overall we believe the long-term trajectory of bills remains affordable.

## 5.11 Bills beyond 2025

As noted in Section 8, we have set our PAYG rate using the natural rate over 2020-25, so we do not anticipate upwards pressures on bills from base totex in 2025.

In the financial model, we have included forecasts over 2025-30 in order to consider the possible longer term bill profile. Our current modelling position is a 3.9% real increase in 2025-26, but we have carried out customer research suggesting that, were any real increases to be required from 2025, customers would prefer a smoothed annual increase to an immediate increase.

There are some factors which in isolation would create upward pressure on bills in 2025, notably:

- A higher cost of capital (we have assumed an increase in nominal appointee WACC from 5.37% to 5.51%); and
- The remaining switch from RPI to CPIH stripped WACC (an increase of around 0.3% on the real WACC).

However, any outperformance of totex or financing assumptions up to 2025 would create downwards pressure on bills as the benefits are passed on to customers.

It should also be noted that the level of enhancement expenditure proposed for 2020-25 is significantly higher than the historic trend due to the increase in WINEP requirements and the inclusion of schemes to address resilience. The level of enhancement investment may reduce to historic levels in 2025-30.

Overall, we believe the long-term trajectory of bills remains affordable, with any real terms increase in bills required in 2025-30 likely to be modest.

## 5.11 Bills beyond 2025

continued

A 3% increase in bill profiles beyond 2025, and in particular for the 2025-30 period, was tested with 167 customers at deliberative workshops in March 2019. The six workshops were chaired by an independent market research partner, Explain Market Research, and were conducted in line with the Market Research Society Code of Conduct, which follows social research best practice.

The workshops were designed with our Water Forums, and the findings were assured by them.

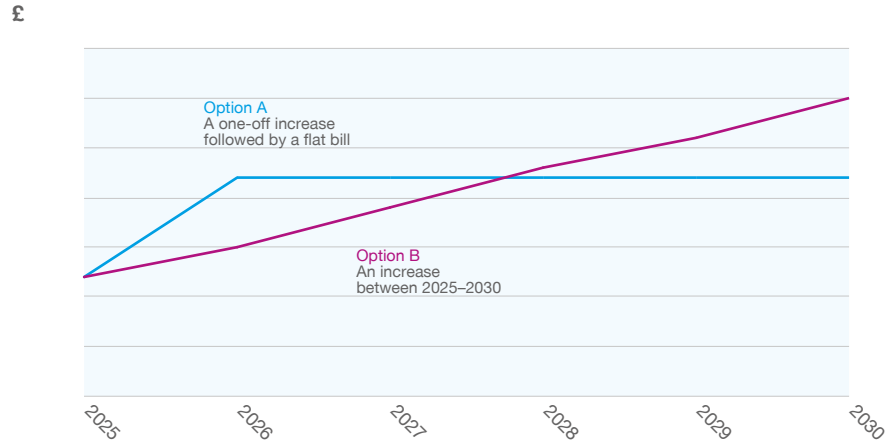
The bill increase was presented as either a one off increase and then a flat bill or an annual increase every year for five years, as shown in the graph below.

The majority of customers (69%) prefer Option B.

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### YOUR FUTURE BILL PROFILE OPTIONS



# 6.0

# HARNESSING MARKETS

[6.0](#) Harnessing markets

[6.1](#) Water resources market

[6.2](#) Bioresources market

[6.3](#) Direct procurement market

[6.4](#) Non-household retail market

[6.5](#) Local network market

[6.6](#) Developer services market

[6.7](#) Our approach to markets

This section describes our approach to facilitating the development of markets across the water and sewerage service value chain. We describe our role in assisting the development of markets, as well as how we intend to maximise opportunities to harness the power of markets and deliver value for customers.

We include consideration of our role in participating in, promoting and facilitating the following markets:

- bioresources and water resources;
- direct procurement;
- non-household retail (in our capacity as a wholesaler);
- local networks, new appointments and variations (NAVs); and
- developer services (including self-lay providers (SLPs)).

We are supportive of these markets and are in a strong position to help make them successful.

## 6.0 Harnessing markets

**We believe that harnessing the opportunities that are offered by markets in the water industry will help strengthen the sector's legitimacy among customers.**

We have taken a proactive approach to the development of markets across the value chain.

We have already undertaken the largest water resources trade made in the industry since privatisation, a 20-year 20MI/d agreement with Thames Water, and are actively pursuing opportunities in the bioresources market. We plan to continue this industry leading position in both markets.

We played a leading role in creating the non-household retail market and continue to facilitate open competition through our role as a wholesaler. Similarly, we have facilitated competition in local networks and in developer services through our constructive engagement with participants in these markets (including NAVs, SLPs and developers).

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**“ We have undertaken the largest trade since privatisation, with a 20-year 20ml/d export to Thames Water. ”**

## 6.1 Water resources market

The water resources revenue control is designed to promote markets in water resources, demand management and leakage services by reducing the search cost and information barriers that third parties might encounter.

Our area of supply includes six Water Resource Zones (WRZs), all of which are forecast to have a supply surplus during a drought which has a return period of greater than 1 in 200 years. This reflects the benefits of our approach to long-term planning and management. As a result, we are not proposing any new water resource schemes and are looking for opportunities for water exports through direct negotiation, the bidding in process or the bilateral market. Such approaches would make the most of our strong water trading position.

In line with Ofwat's PR19 Water Resources Market Information guidance, we have published data tables that enable third parties to identify opportunities to provide new water resources, and to identify and provide demand management and leakage services. Third parties may be other incumbents or independent third parties. We have also prepared our Trading and Procurement Code, which has now been approved and published.

This sets out our trading position and the process by which third parties can progress their proposals. In addition, the Board has approved our Bid Assessment Framework. This would be used to assess offers made to supply new resources or leakage or other demand management services. We will also use this to assess any offers we receive as alternatives to our existing resources.

**A** See Appendix 6.1 for further information on our Bid Assessment Framework

It is likely that water trading between water companies will need to be considered in the context of Regional Water Resource Planning Groups such as Water Resources East (WRE) and Water Resources North (WReN).

### Water Resources East

We recognise the importance of regional multi-sector water resources planning. We are an active member of WRE and fully support it going forwards. We operate in a water stressed area in Essex & Suffolk and so welcome the opportunity to work collaboratively with a wide range of industries, including in the areas of water, energy, retail, the environment, land management and agriculture, in order to develop a long-term, multi-sector water resource strategy for the East.

## 6.1 Water resources market continued

The project builds on the area's unique opportunities for sustainable future growth and pioneers a new approach to managing water resources.

Our WRZs in the WRE area are in surplus through to the end of the planning period. However, WRE's baseline vulnerability assessment has highlighted that the resilience of water supplies, for example in the county of Suffolk, could be vulnerable to future droughts by 2060.

This is partly because of the reliance of the county on groundwater supplies from the Chalk and Crag aquifers. It also reflects the likelihood that abstraction licences may be subject to reductions in annual licensed quantities to make sure that they are sustainable.

The sustainability of our Suffolk groundwater abstraction licences will be investigated in the 2020-25 period as part of the WINEP. If our Suffolk groundwater annual licensed quantities are reduced, this could cause a supply deficit. If this were to happen, we would consider any options to eliminate such a supply deficit with the WRE project.

Our Essex and Northern Central WRZs have a supply surplus, some of which could be traded with and used by other water companies without reducing our levels of service.

We are continuing to explore potential trades with neighbouring water companies. However, none have progressed sufficiently to be included in our PR19 Water Resources Management Plan Water Available For Use (WAFU) assessment. We will continue to seek opportunities to include such trades in future WRMPs.

Despite the existing surplus, we recognise that eventually new water resources will need to be developed for all areas, and that 'new' water for potable supplies will be difficult to come by as a result of the constraints discussed above. We appreciate that in the future, it is going to be more economically viable and acceptable to our customers to develop joint regional water resource schemes that benefit a number of water companies and, most probably, other abstractors. Our approach is in line with that expressed in the recent National Infrastructure Commission report on 'Preparing for a Drier Future' (April 2018). Trading excess volumes at the margin will enable spare resource to be shared efficiently across the industry.

### Water Resources North

WReN was formed in 2017 and covers our NW operating area. It had an initial membership comprising NWL, Yorkshire Water, United Utilities, Seven Trent Water, Hartlepool Water, the EA and Natural England although Seven Trent Water and United Utilities are no longer core members since the creation of Water Resources West. We played a proactive role in creating the network. Its purpose is to provide leadership and coordination to support the delivery of long-term water resource resilience in the north of England across all stakeholders. It also supports activity aimed at ensuring national water resource resilience.

We are actively engaging with Yorkshire Water and United Utilities regarding potential trades with them and are keen to hold constructive discussions with other third parties.

WReN will support greater understanding of the long-term challenges for water resource resilience, both within the north and across the whole country. It will contribute to joint working on future water resource options, and will help the industry to articulate future challenges with a consistent voice and to share best practice in water resources planning.

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**We played a proactive role in the creation to provide leadership and of WReN to support the delivery of long-term water resource resilience in the north of England.**

We share the ambition of government and regulators that greater focus be given to regional water resource planning through bodies such as WRE and WReN. Kielder reservoir is an under utilised resource which we believe can help provide water resource supply resilience for neighbouring water companies but potentially those further south including those in the Thames basin. We are determined to play a leading role in this process and to ensure that a fully integrated regional planning approach is adopted for the 2024 planning cycle.

### Water resources trading opportunities

We are already developing a strong reputation in sharing our water surplus through trading. The most recent example is in our Essex supply area where we made significant investment in the previous price review period to enlarge Abberton Reservoir. This resulted in an increase in headroom with the result that there is now a surplus of water in the medium term. This surplus allowed us to agree a 20-year export to Thames Water (this was in essence carried out by substitution by reducing a historic bulk supply we receive from them).

The trade was executed through a direct contract negotiation with no requirement for regulatory intervention. This was the ideal process for a mature, mutually

## 6.1 Water resources market continued

beneficial trade and both parties were able to make the trade quickly and efficiently. The arrangement trades the existing volumes in the bulk supply agreement.

We have applied for a trading incentive for this scheme as part of our business plan. Our ESW customers have benefited from the trade, as it was included in our revenue forecasts for PR14 and therefore reduced customers' bills over 2015-20. This benefit will continue to apply for the whole trade period.

Following the Thames Water trade, our PR19 WRMP demand forecast for Essex confirms that we now have a much smaller supply surplus and so can only consider trades of less than 5Ml/d between now and 2035. We will be able to consider additional trades up to 20Ml/d from 2035 when our existing 20Ml/d bulk supply agreement with Thames Water comes to an end.

We have a significant supply surplus in our Kielder WRZ and have previously discussed potential transfers with and to neighbouring water companies. The geography of the North East region makes the practicalities of water trading more difficult than, for example, in the south east.

As the region is bounded by sparsely populated, rural boundaries (the Pennines, North Yorkshire moors and the Scottish borders) so there are very few interconnections. There is a cross border supply in place to the town of Alston in United Utilities' supply area.

Kielder Reservoir provides a significant supply surplus which, with additional infrastructure, could be used to support both neighbouring water companies and also water companies further south. For example, a neighbouring water company could take a raw water supply into one of its WRZ from a river that is supported by Kielder Reservoir. This could then allow that company to release water from another of its WRZ to one of its neighbouring water companies and so on. This theoretical transfer scheme was highlighted in Phase 1 of the Water Resources Long Term Planning Framework project. It is now being considered further by the same project and by the WReN and WRE regional groups.

Although we have a supply surplus in all of the other WRZs, the surplus is not sufficient for us to consider a trade except perhaps of a small, localised nature.

Further information is provided in an Appendix to our IAP response.

### Ofwat IAP test areas

 Targeted controls, markets and innovation

## 6.2 Bioresources market

The introduction of a new bioresources price control along with the requirement to publish bioresources market data each year is intended to facilitate the creation of a bioresources market.

We are in a strong position and are ready to actively participate in this market, building on our current trading activities with neighbouring water and sewerage companies.

Our relative unit operating costs per tonne of dry solids are the lowest out of the ten water and sewerage companies that operate in England and Wales (Ofwat, May 2016).

We are committed to maintaining and extending this exemplar position. We aim to generate further revenues through trading with other bioresources and organic waste producers.

We talked to customers specifically about our leading bioresources service and the generation of renewable energy at our Innovation Festival 2017. They supported our approach, thought that it was the right thing to do and said that we should expand on it.

Excellent customer service for bioresources means no customer complaints, and that there is increasing customer awareness of 'power from poo' and of the environmental benefits from the renewable energy.

We demonstrate environmental stewardship in effectively and safely recycling nutrient rich bioresources to agricultural land as a valuable fertiliser product.

The EA expects water and sewerage companies to continue to show that bioresources are well managed and that they do not cause pollution to land, surface water and groundwater. This also includes landbank accessibility and resilience to extreme weather events in beneficially recycling nutrient-rich bioresources to agricultural land. We have consistently demonstrated 100% compliance in this measure. Our strategy will allow us to continue to meet all regulations and remain fully compliant with the Biosolids Assurance Scheme.



## 6.2 Bioresources market continued

### Sludge management strategy

We operate and carefully manage the life cycle of sludge that is continuously produced from more than 400 STW. We have taken advantage of the geographical population profile in our area in developing our sludge treatment strategy. Sludge from STWs comes into sludge handling centres where it is dewatered and then further transferred to one of two sludge treatment centres (Howdon or Bran Sands).

Sludge transport is a 24/7 operation. All sludge is effectively treated and renewable energy recovered at our sludge centres through AAD. This strategy provides economies of scale in AAD processing, minimises transport costs and maximises energy recovery. Our large STWs are capable of effectively treating all liquors from sludge handling and treatment.

Our strategic sludge handling and treatment centres are ideally placed to take all of our bioresources efficiently both now and into the future. At present, there are no alternative treatment facilities that are operated by third parties in our area of supply which would be capable of dealing with our bioresources volumes, delivering an enhanced fertiliser product or offering a more efficient treatment option.

Whilst others do not have treatment facilities close to our locations within economic distances we do have efficient treatment and energy recovery plants within an economical distance to serve some of our neighbours' plants. We frequently do this when we have capacity available.

Our sludge transport and recycling operations are managed by a dedicated sludge management operations team which directs our fleet of sludge haulage vehicles using state of the art equipment, such as global positioning systems, vehicle telematics and logistics planning systems. Our sites are equipped with monitoring devices that provide just-in-time information on storage levels and sludge quality to our integrated sludge movement planning and scheduling system. This approach provides flexibility and operational resilience in our processes.

It also means that we have been able to accommodate bioresources from third parties, including other water and sewerage companies, for treatment. Depending on the volumes, type and quality of the sludge involved, we have the ability to adjust the balance of bioresources transported into our AAD centres by taking into account the efficient use of resilient capacity in our bioresources assets, including that for handling centres and strategic storage.

#### Ofwat IAP test areas



## 100%

we will be the only water and sewerage company to have 100% of our energy-rich biogas used through this valuable route

### Expanding biogas capacity

To ensure that our infrastructure is equipped to fully maximise the opportunities presented, we will increase our capacity at our AAD sites so that we can offer all-year-round capacity for trading in the bioresources market while also increasing the resilience of our operations. This will include additional digester capacity and capacity in the sludge chain, and removing pinch-points from the process.

At our Howdon AAD site, we directly inject energy-rich biomethane into the natural gas grid, providing an energy conversion efficiency of over 95%. This is considerably more than from CHP gas engines. This also means that a greater proportion of renewable energy is produced and has led to further operational efficiencies from gaining valuable renewable energy incentives (ie Renewable Heat Incentive) that also supports the Government's renewable energy policy.

We plan to introduce gas to grid at our Bran Sands AAD site by 2020, which will generate further revenues and improve business efficiency.

It means that we will be the only water and sewerage company to have 100% of our energy-rich biogas used through this valuable route, further strengthening our status as the leading bioresources market business in England and Wales.

The end product from AAD, apart from biogas, is nutrient-rich bioresources or biosolids. This is recycled sustainably as a fertiliser to agricultural land in accordance with all applicable regulations. This is recognised as the Best Practicable Environmental Option for biosolids, adding plant nutrients and humus-forming material to enrich the soil, and is supported by the UK Government.

We will explore other sustainable uses for our biogas products, such as in road fuel under the UK Government's Renewable Transport Fuel Obligation which integrates with our plan to decarbonise our fleet by 2024.

Recovered energy can be used at Bran Sands and Howdon to power the sewage treatment processes, moving these works closer to being 'self-sufficient'.

## 6.2 Bioresources market

continued

### Bioresources trading opportunities

As with water resources we will publish market information annually in line with Ofwat's guidance. This will be accessible on a dedicated bioresources market website.

We are investigating the potential for long-term treatment contracts for bioresources arising from neighbouring water and sewerage companies, particularly those located relatively close to one of our AAD centres.

For example, we have been actively engaging with Yorkshire Water in their 2018 Bioresources Market Testing of the collection, treatment and recycling of bioresources to offer them resilient, innovative and efficient solutions. This activity has been led by our Commercial team, who together with our Bioresources Management team, have vast experience and expertise in the development, installation and operation of innovative, resilient and specialised solutions.

Our customers will share in any benefits that the appointed business gains from importing, treating and recycling bioresources or organic material using appointed business assets. This will be done by ensuring that the transfer price takes into account incremental costs and an appropriate share of the margin that reflects the risks incurred by both the appointed and non-appointed businesses.

Our pioneering investment in green energy production will help meet our ambitious goals to be carbon neutral by 2027.

**A** See appendix 6.2 for our Bioresources strategy

#### Ofwat IAP test areas

**CMI** Targeted controls, markets and innovation



**Our customers will share in any benefits that the appointed business gains from importing, treating and recycling bioresources or organic material using appointed business assets.**

### Leading the way in green energy production for the water industry



**We are the first water company in the country to use all of our sewage sludge to produce gas and electricity. We have transformed sewage sludge from being a waste product into a fuel being used to produce green renewable energy.**

We have invested £75m in thermal hydrolysis AAD. The procedure uses a natural, biological process that involves taking leftover sewage sludge and heating it in something similar to a giant pressure cooker.

Our Howdon and Bran Sands AAD sites process all of our sewage sludge to produce biogas and use this to generate renewable energy all year round. At our AAD plant at Howdon, we have made the 'power from poo' process even more efficient by building a pioneering £8m gas-to-grid plant, one of the largest in the water industry.

Biogas is upgraded after the AAD process by removing carbon dioxide so the purified gas (biomethane) can be injected directly into the national gas grid. We are also planning to introduce gas-to-grid at Bran Sands by 2020, which would double our export capacity.

By moving the final sludge as a cake to land rather than a liquid we have reduced our carbon footprint from 90,000 tankers per annum to 10,000 trailers annually. This has contributed to us reducing emissions by 46% since 2009 and hitting both our 2015 target (of 20% reduction) and 2020 target (of 50% reduction) two years early.

## 6.3 Direct procurement market

We support the proposals that were outlined in Ofwat's final methodology in relation to direct procurement for customers (DPC) and have ensured that our processes align with this approach. We have explored opportunities for potential projects, and although we have not identified any of a scale envisaged by the methodology we will continue to review the position. We believe our procurement strategy will deliver a number of the benefits associated with the DPC approach. Our strategy provides a check on both the availability of differing approaches to the design and build of assets, as well as non-asset based solutions and non-industry based solutions.

We fully support this model as within NWL we provide such services to, among others, Scottish Water where we designed, built, financed and now operate four wastewater treatment plants.

We recognise that DPC for discrete projects of a significant scale may have potential benefits for customers. We have considered DPC for all known or planned discrete, large-scale enhancement projects that we expect will cost more than £100m based on whole life totex for the 2020-25 period.

Only one scheme met the WLC value threshold of £100m totex. That scheme, Howdon STW has been tested against other DPC discreteness criteria. Howdon STW is a scheme which includes base service, enhancement and growth investment over the AMP period. The scheme is a complex upgrade to an existing operational works requiring full operational engagement during the upgrade and therefore will not be suitable for DPC delivery.

We have reviewed potential projects for their suitability for DPC by referring to Table 7.1 of Ofwat's guidelines and to the findings of the independent review that was commissioned from KPMG as an assessment tool. We ensured that we had carefully considered and defined the type of projects and assessed their suitability based on the technical discreteness and projects that maximise customer benefit to the greatest extent possible. We also took into consideration the benefits associated with financing, integration of design and maintenance approaches and the potential for innovation.

We estimate that schemes in excess of £50m capital value may exceed the threshold when long-term opex is factored in to give a total whole life totex value. While we have identified a number of programme-based delivery solutions over the 2020-25 period, such as our sewer flooding programme, none of the projects meet the discrete criteria outlined.

### Ofwat IAP test areas



### Designing direct procurement delivery

Our existing investment delivery model is sufficiently flexible to accommodate any DPC opportunities that arise. Our current procurement template is to deliver solutions using design, build (DB) models, based on the value and risk associated with each investment. These arrangements are typically delivered through our capital delivery framework partners and are founded on incentivised commercial terms.

Our arrangements are consistent with the strategic objectives of the UK Government's Construction Strategy (Cabinet Office 2011, revised March 2016). We defined these principles as:

- Operating as an expert client, confirming and prioritising business needs and the outcomes required;
- Providing programme visibility and commitment to chosen delivery partners;
- Developing appropriate and meaningful early contractor involvement, resulting in appropriate commercial models that incentivise delivery; and
- Providing a collaborative challenge and environment, thereby creating the right incentives for innovation and performance.

We articulated further supporting characteristics as:

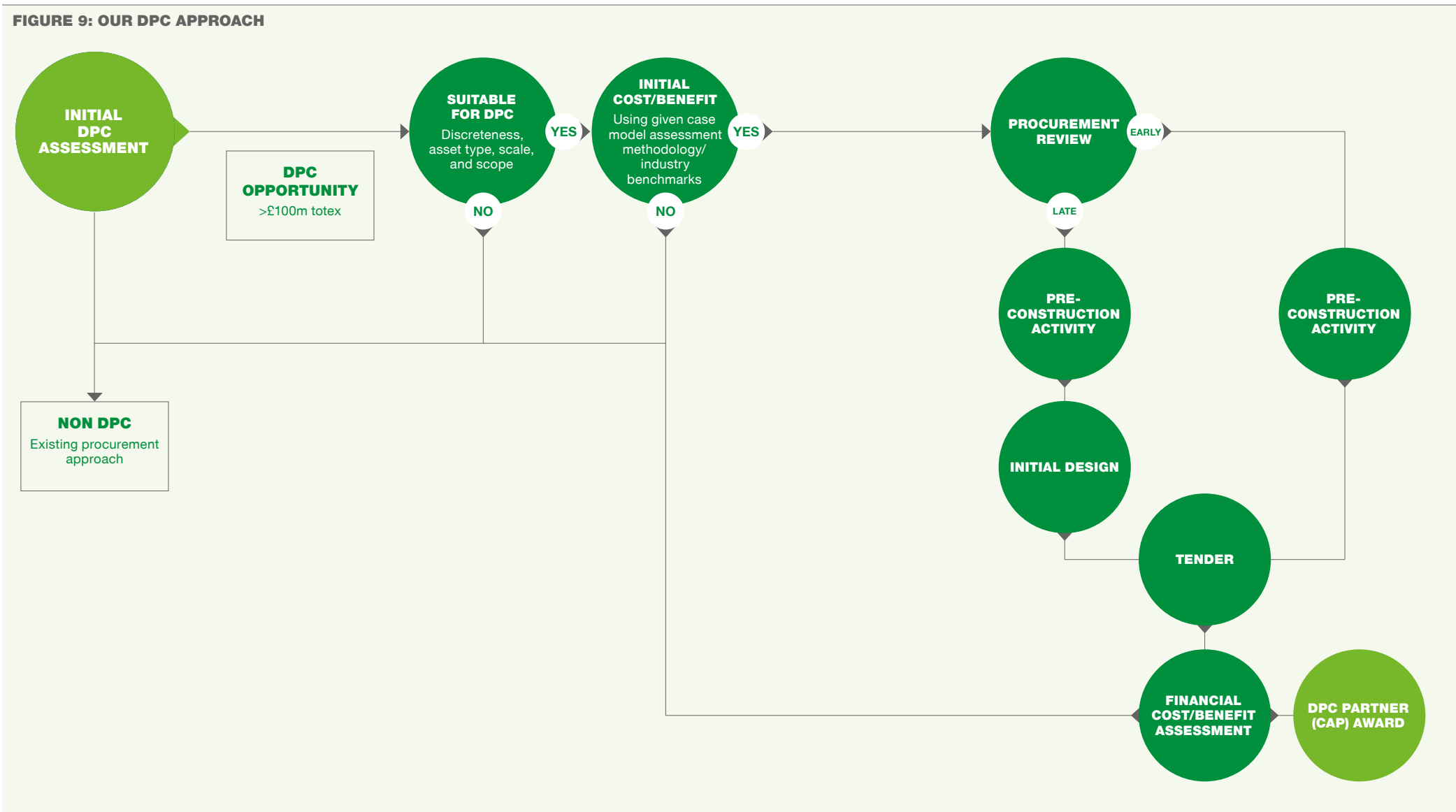
- Applying Building Information Modelling (BIM) principles for solution development and operation;
- Establishing the 'should' cost of solutions;
- Setting common repeatable standards that encourage build offsite and eliminate waste;
- Fair payment across the supply chain; and
- Ensuring a capable, sustainable workforce.

Our approach is a tried, tested, efficient and award-winning approach to project and programme delivery. In recent years, we have been awarded Client of the Year 2017 at the Constructing Excellence North East Awards as well as being highly commended in the Client of the Year category in the national Constructing Excellence Awards 2017. The citation noted our robust and innovative approach.

Runway 1 consists of low value schemes including reactive maintenance. Runway 2 and 3 are the medium planned projects and large complex projects respectively.

## 6.3 Direct procurement market continued

FIGURE 9: OUR DPC APPROACH



## 6.3 Direct procurement market continued

Runway 1 and 2 projects are delivered by framework contracts. However, a fundamental element of our efficient procurement strategy is that high value, complex procurement is dealt with by competitive tender (this is referred to on the Runway 3). Runway 3 would be well suited to the delivery of any DPC projects.

In response to the guidelines that Ofwat has published we have enhanced our existing competitive tender process for design and build schemes. We adopted HM Treasury's Five Cases Model to provide a robust and iterative business case methodology which ensures that we fully assess all of the following:

- The strategic case – ensuring that the proposed project has a robust business case, meeting the strategic and operational needs of the business;
- The economic case – by assessing all realistic and achievable options, completing initial cost benefit analysis for both the standard and DPC;

- The commercial case – the development of a structured procurement approach related to the planning and management of procurement. To establish the preferred option to competitive tender in accordance with EU procurement rules and detailed risk allocation in the design, build, finance, operate (DBFO) phases of the proposed scheme. This includes making an assessment of any third party funding that is available and of the project's attractiveness to the market for DPC;
- The financial case – aim to demonstrate that the preferred option will result in an affordable contract, with detailed capital and revenue requirements; and
- The management case – final review of risk management approaches that the overall preferred option is capable of being delivered, is achievable and can be successfully delivered.

Should we identify a suitable DPC opportunity we will put in place robust contract mechanisms to ensure that customers can be assured that the required outcome will be delivered and that it represents value for money.

### Ofwat IAP test areas



### Bidding for DPC opportunities

As well as continuing to review whether any viable DPC opportunities emerge in our investment programme we are keen to explore the potential to bid for DPC work that is commissioned by other companies. We noted under Section 6.2 that we are actively seeking opportunities to attract bioresources from neighbouring companies to be treated at our sites. There is clearly a limited capacity to use existing assets. We are also interested in any potential opportunities to construct new assets under a DBFO arrangement.

The wider NWL already operates seven wastewater and sludge treatment facilities in Scotland (Ayrshire and Fife) and in Ireland (Cork) that consist of AD and thermal technologies. We have also commissioned a farm-waste AD facility in Leeds, including energy recovery through CHP and gas to grid biomethane injection.

Building on this commercial experience we have an opportunity to investigate new construction and operational models. These may allow us to continue to extend our efficient and innovative approaches in bioresources to other water and sewerage companies and to continue driving the efficiency frontier forward in this market for the benefit of customers.

## 6.4 Non-household retail market

Wholesalers have an important role to facilitate the effective operation of the non-household retail market.

We have played a key role in the new water retail market – from inception right through to the current day as a founder member of MOSL. Our CEO, Heidi Mottram, was one of the main industry players in setting the market on its path to opening. Since then a range of NWL staff have made significant contributions at all levels to the smooth opening and operation of the market.

We remain actively engaged in the working groups and sub-committees that have been focused on resolving issues and making improvements to the market. We are fully committed to participating in a successful and vibrant competitive water market. In this regard our primary aims as wholesaler are:

- Contributing to awareness and understanding of the market;
- Contributing to and ensuring the efficient functioning of the new market;
- Ensuring a strict level playing field for all retailers;
- Ensuring that any barriers to market entry are removed or minimised; and
- Supporting innovation within the market.

### Ofwat IAP test areas



Targeted controls, markets and innovation

### Contributing to awareness and understanding of the market

Prior to market opening we completed a wide range of business engagement activities to raise awareness of the new retail water market. This succeeded in achieving higher scores than were received by our peers in Ofwat's customer awareness surveys.

In November 2017, we commissioned an independent survey of 500 non-household customers to assess their awareness of the market, their understanding of the market and their experience of NWL as a wholesaler. The results of the survey were positive, highlighting 67% awareness of the new water market.

We recognise that 33% of those surveyed remained unaware; furthermore, of those that were aware a high percentage still wanted to know more about the market. We will therefore continue to engage with retailers and non-household customers and will use wide-ranging approaches to enhance awareness of the market. We will continue to support the market by tracking awareness levels going forward.

### Contributing to and ensuring the efficient functioning of the new market

For the market to function efficiently it is important that all trading parties take ownership of their own data quality and that they process all market activities in a timely way. We are confident that our pre-market data cleanse programme has meant that our overall data quality is robust and fit for purpose. That said we will continue to make sure that if there are any residual data issues then we are proactive in finding and correcting them.

Transactional processing is key to the market's efficient operation and we have set ourselves a target to achieve market leading performance in the Market Performance Standards (MPS) and Operational Performance Standards (OPS) regime. At present we are not at the level we aspire to be and we will put this right by making improvements in our process and, if necessary, with system changes. We will also monitor and assess other aspects of our performance that are not covered by the MPS and OPS regime but that retailers identify as being important.

We continually track various aspects of our performance and in particular our MPS and OPS compliance statistics. We report these regularly to our ELT. We act on the findings of this monitoring and in particular address any process, system or training issues identified.

We have a very strong account management function and they hold regular meetings with all retailers to resolve any issues that have arisen on a timely basis. We will shortly be introducing a brief performance report for each retailer to help them track and monitor our performance. We are currently revising the final draft format and content for the report.

In February 2018, we commissioned an independent telephone survey with all of our retailers in order to gather feedback on a range of performance aspects. Overall the findings were very positive and we scored particularly highly for our account management services. The survey identified a number of areas where we could provide further assistance to retailers. We are now acting on the feedback received and formulating targeted changes to help improve certain aspects of our service to retailers. This feedback has been incorporated into our business plan proposals.

Retailers operating in the new market can be faced with a wide range of different policies and practices across the wholesaler cohort. We are actively involved in a number of initiatives that are simplifying and standardising policies and practices wherever possible. This process needs to balance the benefits of a consistent approach with allowing the flexibility that is required to encourage innovation and new approaches.

## 6.4 Non-household retail market continued

A good starting point is to agree common terminology across different wholesalers. This will allow retailers to access and understand policies and practices more rapidly.

We will continue to engage with retailers on both an informal and a formal basis with the specific aim of identifying areas where we can help them.

### Ensuring a strict level playing field for all retailers

Our strategic approach to the retail water market saw us exit the market to an associated retailer. This decision was in part based on our belief that this approach would reduce significantly the risk of level playing field issues. Our preferred strategy, and the one we carried out, was to exit fully to an entity that would be separately managed and governed, located separately from our business, and with entirely separate systems.

We have a full-time Compliance Officer who is responsible for compiling our performance data and the investigation, in association with the relevant account manager, of any issues raised or identified. This enables us to be proactive in identifying issues before they become a problem for any retailers. It also ensures that all issues are thoroughly investigated.

Our account management function ensures a consistent approach is adopted with all retailers. Our processes are designed to be 'retailer agnostic' and while the current levels of transactions are still predominantly with the 'exited' retailer this balance changes daily and does not influence any aspect of our service provision.

### Ensuring that any barriers to market entry are removed or minimised

We will continue to support well considered changes to the design of the market that create more opportunities for market participation.

The wholesale retail contract is a prescribed form and we have a simple, consistent approach for progressing all new requests. We have encountered no issues or problems in the process of establishing these contracts.

One aspect of the market arrangements that has been a cause for concern is the establishment of credit support arrangements. We understand that this has proved challenging for some retailers.

We have therefore taken a flexible and collaborative approach to establishing the required arrangements. This has included introducing an alternative eligible credit support arrangement that offers enhanced credit terms to all retailers.

We will continue to be proactive and to accommodate all new entrants to the market. As such we will act promptly to support the industry in resolving any perceived barrier to entry issues.

### Supporting innovation within the market

We have consistently demonstrated our willingness and capacity to think innovatively within the sector. We consider that continuing this mindset will be key to the development of potential value add services to customers. We envisage that as the market matures and develops additional and innovative services will develop; these may even evolve into competitive markets in their own right.

We see that our role as a wholesaler is in part to actively develop and offer services. However, in addition, and perhaps more significantly, we must be fully supportive of initiatives and ideas that are developed and proposed to us by retailers.

The provision of water efficiency services, underground asset management, and effluent treatment advice are a few examples of potential areas. Our approach will be to embrace and facilitate such initiatives as far as possible within the new market.

#### Ofwat IAP test areas

 Targeted controls, markets and innovation

## 6.5 Local network market

Our engagement with the NAVs revealed that their main areas of interest are that:

- NAV charges should be transparent and clear;
- applications should be processed in a timely and effective way; and
- planned and unplanned interruptions should be managed well.

This feedback has shaped the proposals in the plan.

Ofwat has recently finalised its guidance on NAV charging. We are currently in the process of finalising the changes we wish to make to the draft bulk charges for NAVs that we published previously. We will provide a clear indication of our charges and how the charges are made up.

It is essential that the basis of our charges is clear, in order to allay any concerns that NAVs may have about whether or not their charging is fair relative to the charges we make for developers that deal direct with us. Providing this level of clarity will give assurances to NAVs that we are undertaking a fully transparent approach.

## 6.5 Local network market continued

We have moved responsibility for managing our NAV accounts within the central wholesale team. As a result our NAV customers will benefit from the account management processes that are provided to retailers.

Although we have not had any problems with our account management for NAV customers in the past, we are now able to track and manage applications, and manage unplanned and planned events in a more streamlined and consistent way. Each NAV will be assigned to a nominated account manager who will have direct responsibility and accountability for the service that we provide. Regular liaison meetings will also be instigated so that service provision standards are maintained. We envisage that this more direct approach will actively encourage approaches and engagement with NAVs.

### Ofwat IAP test areas



Targeted controls, markets and innovation



**NWL is committed to harnessing the potential for market wherever possible across the value chain.**

## 6.6 Developer services market

We will provide a consistently unrivalled customer experience during the whole project life cycle for all our developer customers. This includes major volume home builders, SMEs and one-off developers, commercial development companies, SLPs, and the supply chain partners of all of these customers.

During the development of our new charging arrangements for 2018, we engaged with a wide range of developers and SLPs to listen to their views and better understand each sector's needs. We hosted workshops and, as many of the established SLPs have head offices outside of our regions, we travelled to meet them individually.

As well as discussing the new charges scheme, we also sought to understand how we could support the successful delivery of self-lay schemes more effectively.

We consistently heard that developer customers wanted a single point of contact within our company to improve our internal communications. We will therefore introduce key account managers for our developer customers.

We will also ensure that all of our guidance notes, application forms and web pages clearly highlight the role that alternative providers play within this competitive market.

In addition, we will support the development and delivery of the Codes for Adoption water sector guidance, and ensure that our processes and policies are aligned with the final, nationally agreed document.

To improve developer awareness of self lay and the benefits it can bring, we will hold a launch event for the new adoption codes in 2019, and will invite the SLPs to play an active role in this.

## 6.7 Our approach to markets

As can be seen from the contents of this section NWL is committed to harnessing the potential for markets wherever possible across the value chain.

We are an active participant in water resources and bioresources markets. As a wholesaler and incumbent we are facilitating and encouraging market development in retail, local networks and developer services.

We will continue to adopt a constructive and positive approach to new markets, seeking out new opportunities that benefit our customers.



# 7.0

# SECURING COST EFFICIENCY

- [7.1 Our approach to efficiency](#)
- [7.2 Transformational innovation to deliver efficiency post 2020](#)
- [7.3 Base modelled totex \(as defined in Ofwat's March 2018 consultation\)](#)
- [7.4 Setting our stretching 2020-25 annual efficiency target](#)
- [7.5 Unmodelled base totex](#)
- [7.6 Cost adjustment claims](#)
- [7.7 Enhancement schemes](#)
- [7.8 Independently evidenced track record of delivering efficiency over 2015-20](#)

Putting customers at the heart of our business means continuing to deliver more for less.

This section explains our approach to cost efficiency, sets out our cost efficiency position and our cost efficiency targets, and describes the activities we will undertake to continue to drive cost efficiency within our plan.

## 7.1 Our approach to efficiency

**Our customers quite rightly expect us to drive future efficiencies in our costs, as they do with other organisations that provide services to them.**

It is not enough for us simply to demonstrate that we are currently one of the most efficient water companies. Rather, to retain our customers' high confidence in us, we must continue to demonstrate the ongoing, dynamic power of innovation and investment.

The incremental approach to efficiency that the sector has taken to date has delivered significant savings for customers since privatisation. However, these efficiencies have now been delivered, and what is needed at this point is a step change in the intensity of innovation and investment to deliver future savings.

The efficiencies we have proposed – both as stretching catch-up targets and our ambitious proposals to extend the efficiency frontier – will be extremely challenging. Our 1.5% pa efficiency target for base modelled totex means that annual costs will be £26m pa lower by 2025 as a result. As we employ around 3,000 people, this requires every employee to generate more than £8,000 of efficiencies by 2025, a substantial change in productivity.

### Ofwat IAP test areas



**50%**

we were recognised by Ofwat and the industry as being the most efficient bioresources service company and are now 50% more efficient than the upper quartile position

**1.5%**

our 1.5% pa efficiency target for base modelled totex means that annual costs will be £26m pa lower by 2025

We set out below a series of the largest and most comprehensive transformational programmes that we have ever delivered. These will contribute to the delivery of a step change in efficiency and performance over 2020-25 and beyond.

The scale of these programmes should not be underestimated; they will change what we do, the decisions we make and the way we work. Every employee will be involved, as will many of our suppliers and other stakeholders. They constitute a complete change of our operational systems, across water, wastewater and retail.

We have experience of how this can work. In the period 2000-10, our efficiency position in relation to bioresources was one of the poorest in the industry. Our incremental approach to improving our position was failing, we needed fundamental change in the way we dealt with bioresources. We made a significant upfront investment in moving to our new sludge strategy of 100% AAD treatment. Within a few years, we were recognised by Ofwat and the industry as being the most efficient bioresources service company and are now 50% more efficient than the upper quartile position.

### OUR STRETCHING TARGETS FOR 2020-25

- We have not submitted any cost adjustment claims for base modelled costs in this plan. We have taken this approach consciously, with Ofwat's guidance in mind, which states that:
  - “Other things being equal, a company that raises cost adjustment claims only where necessary, and where the claims are well evidenced and efficient, is likely to score higher in the cost efficiency test than a company that uses the process less carefully, and whose claims are unwarranted and of low quality.”;
- We have set ourselves an ambitious annual frontier efficiency target of **1.5% pa**. This has been set with reference to the industry outperformance over 2015-20;
- We have applied the 1.5% pa efficiency target to all base modelled totex; and
- We have set a 1.0% pa efficiency target for enhancements.

### OUR EFFICIENT STARTING POSITION AT 2020

- Overall, under the Ofwat efficiency models published in March 2018, we are ranked as one of the leading water and sewerage companies;
- We are the frontier company for bioresources, being 50% more efficient than the upper quartile level;
- We are at or near upper quartile level for water network plus and wastewater network plus;
- For water resources, we expect our projected efficiencies from 2017/18 to 2019/20 to bring us back to the upper quartile level; and
- For retail household, despite the very significant levels of deprivation in the North East of England and challenging London Boroughs that we serve, we are also at upper quartile level in the Ofwat models.

### OUR 2015-20 PERFORMANCE HIGHLIGHTS

- To date, from 2015, we have consistently outperformed both the PR14 baseline and the industry average level of outperformance for all services;
- For wastewater, we are the frontier company in relation to the PR14 final determination and industry performance;
- For retail, we are around upper quartile compared with industry performance to date;
- For water, we are near upper quartile, with the gap attributable to water resources (see below for our stretching 2020-25 target); and
- In RoRE terms, we have delivered the second highest totex outperformance of any water and sewerage company.

## 7.2 Transformational innovation to deliver efficiency post 2020

We intend to continue building on our track record of efficiency with a number of investments that will transform the way we work. We describe these in more detail in the following sections. Each of these schemes impact on all aspects of our business. We want to learn from the best and take considered risks in order to be at the frontier of customer service. Based on our track record, we are confident that we can deliver our ambitious plans.

### Our IAM transformation programme

The Intelligent Asset Management (IAM) transformation programme is the largest, most ambitious transformation of the way we manage our assets that we have ever been involved with. It is centred around innovation in the way we make decisions, use data and set priorities.

We have committed to a significant upfront investment of time and money within the current totex allowances over the 2015-20 period, and expect the programme to deliver ongoing, sustainable efficiencies beyond the 2020-25 period.

As we prepare for the next business plan period, one of the most important requirements for us is to transform how we manage our assets. The more information we have about our assets, the more efficiently we can act. Asset health is also key to building operational resilience.

IAM is a business led and IS enabled transformation programme that will deliver a step change in our approach to asset management and significantly enhance our capability in this area. It will do this through establishing an enhanced target operating model. This model will encompass all of the people, processes, information and technology aspects required to support the entire asset management life cycle.

Specific consideration is being given to data integrity, process integrity, governance, and information system requirements as our reliance on data and information continues to grow and we become an increasingly digital business.

The IAM project requires an initial investment of up to £22m. The expenditure is part of base costs, so will be managed within our existing budgets to 2020 and as part of the upper quartile baseline from 2020 onwards, so customers will not pay more for this investment.

As can be seen from the figure opposite, our efficiency projections from the IAM transformation forecast savings of around £43m by 2026/27. These savings will be a major contribution towards our 1.5% pa efficiency target.

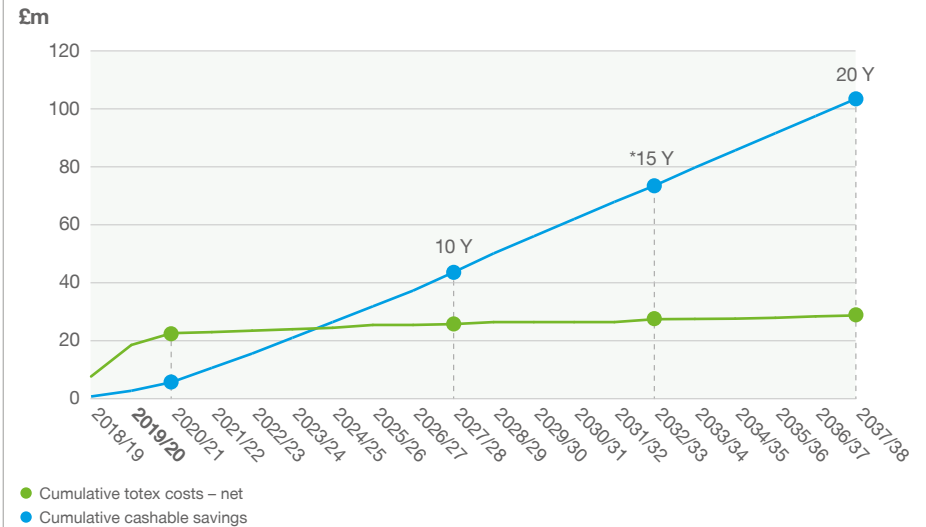
#### Ofwat IAP test areas

**CE** Securing cost efficiency

**£43m**

efficiency projections from the IAM transformation forecast savings of by 2026/27

#### IAM COST/BENEFIT ANALYSIS



\* 15 year timeframe recommended by PA consulting

### Innovation in procurement and asset investment to drive efficiencies: The Asset Investment Hub

Co-location of our Run2 team brings many benefits including being more efficient, allowing for smarter working practices and enabling us to take the collaborative approach that is such a fundamental part of our overall business strategy. This was a further development of our operating model for capex delivery in 2015-20, which was implemented following a strategic review of our capex approach in 2013.

In that review we examined our previous approach against best practice with the support of an external expert commercial consultant, Turner & Townsend.

The review used a combined maturity and benchmarking methodology, measuring our business against best practice from successful capital programmes in many sectors across the world. An analysis of our capex business model identified the potential for significant savings through actions across a number of areas. Our 2015-20 operating model seeks to address many of these opportunities.

## 7.2 Transformational innovation to deliver efficiency post 2020

continued

We implemented new operating and commercial models for capital delivery and re-organised our Asset Investment team to align with our partners' teams and to support the achievement of our business outcomes and efficiency targets. Importantly, our new operating model did not go to the lengths of outsourcing the delivery, monitoring and governance of the investment programme to an 'alliance'. This was because we recognised some of the frailties of such a model, which had been highlighted by the shortcomings of others in our sector with poor operational performance in 2017/18. Our robust operating model ensures we maintain clear ownership and strong governance arrangements.

Co-location has been a natural progression for this model and a key enabler to achievement of our efficiency. This has been supported by the development of an integrated business plan with our framework partners, overseen by a joint governance group.

Many of the savings identified in the 2013 review are already being delivered up to 2020, so the potential savings identified includes some 2015-20 outperformance. Our 2015-20 efficiency is logged through our Working Smarter Programme. So far approximately £120m efficiencies have been realised in the first three years of the period 2015-20.

Capex efficiencies are being delivered through the cultural change that is being enabled by our new operating model and through innovation to produce efficient solutions on specific projects. The savings can be split equally between strategic gains from the new operating model and project efficiencies.

Recent examples include an innovative approach taken on the CSO Event Duration Monitoring programme which has resulted in a forecast efficiency of £5m to be realised by the end of the 2015-20 period. Measurement chambers are to be constructed alongside CSOs to monitor spill events rather than reconstructing the existing structures. There are also many instances where teams are realising efficiencies through the new operating model. Negotiating the target cost on the Sewage Pumping Station Maintenance Programme realised a £1m efficiency and batching of two STW projects realised a saving of £400k.

### Ofwat IAP test areas



**£120m**

our Working Smarter Programme has so far realised approximately £120m efficiencies in the period 2015-20

These savings will be sustained and extended over 2020-25 through our model. This approach is a major contributor to our stretching 1.5% pa efficiency target for all base modelled totex that we have embedded within the plan.

The strategy is projected to deliver savings from 2017 onwards, so some are part of our starting position of upper quartile efficiency. These savings are not cumulative, some relate to parts of the investment chain and others will be mutually exclusive. However, we believe an average efficiency across the capital programme of around 5% of current spend profiles should be an appropriate target.

### Innovation in procurement and asset investment – source of efficiencies

Area	Potential Saving (up to)
1 Integrated risk and value	10%
2 Design management and value based design	5%
3 Reduced design costs	1%
4 Reduction in post contract increases	1%
5 Standards and specifications review	1%
6 Lean delivery processes and project controls	0.5%
7 Reduced contract admin costs	0.1%
8 Contractor engagement to reduce waste and increased productivity and aligned incentives	5%
9 Optimised batching and forward planning	2%
10 Introduction of should cost culture	5%
11 Introduce schedule management and earned value management	1%
12 Improve commissioning process	2%
13 Increase benchmarking of negotiated contracts	5%

## 7.2 Transformational innovation to deliver efficiency post 2020

continued

### Innovation: Building Information Modelling

BIM is a process by which assets are defined in a standard way and in digital form. Promoted by government, the approach will ultimately reduce the total cost of asset ownership. It is a process that creates and manages digital outputs on a construction project across the project life cycle. It also provides a structure that helps the asset owner to manage the assets over their full life cycle in the optimal way. The key output is the BIM which is the digital description of the built asset. This digital description is collaboratively assembled across the supply chain at key stages throughout the delivery of the project.

We played a leading role in promoting BIM in the water industry. We pioneered its application in sewer networks, demonstrating the concept at city scale through a collaborative project with Northumbria University. Working with our suppliers and other industry stakeholders it is our intention to progressively increase and improve the data we hold in relation to our asset base. Services will become more reliable as a result, and operational costs will fall.

We have fully embraced the BIM philosophy detailed in BS/PAS1192 and as such have put in place a dedicated BIM/Information Manager who has written and owns our BIM strategy. The BIM/Information Manager is working closely with our framework partners to set the foundation required to deliver the digital information successfully. These foundations include the development of the Employers Information Requirements, Organisation Information Requirements and Asset Information Requirements, which are the cornerstone of the digital information flow. We have also detailed our medium-term goals for our framework partners in a document entitled 'BIM2020'.

Taking a leading position, we have also developed the water industry standard for the digital description of assets known as Product Data Templates (PDT). These templates digitally describe each asset and allow the transfer of this structured information into our Asset Management System. We are freely sharing these PDTs with the other water companies via the BIM4Water Groups and British Water. To date 14 have been formally approved for use within the water industry and we have a further 14 under review. We are also working with the UK BIM Alliance and sharing our experiences so that a national standard for PDTs can be developed.

Given the nature of our asset base, there are a significant amount of PDTs to be created to cover all assets. However, we have initially targeted wastewater pumping stations and have developed all the PDTs required. We are currently selecting projects to act as exemplars for all future projects.

We have also taken the bold step to reclassify our assets to Uniclass 2015. This will align our assets to the government-backed construction industry classification system. In effect we will have an industry classification system rather than a company bespoke classification system; this will allow us to compare and share accurate asset information across UK industries.

The BIM approach is working hand in hand with our transformational IAM programme. Both have the same goal of delivering accurate digital information across the business. The BIM process deals with creating and amending new and existing assets while IAM is concentrating on the management of our current asset base. As such the BIM and IAM teams are working closely to make sure that efficient data transfer, governance and storage processes are in place.

#### Ofwat IAP test areas



**Taking a leading position, we have also developed the water industry standard for the digital description of assets known as Product Data Templates (PDT).**

### Encouraging an innovation culture to drive efficiencies: InvestQuest

In 2017, we launched our 'InvestQuest' initiative, a Dragon's Den-style opportunity for employees to bring forward great ideas to help us to work smarter.

We identified three projects that we decided to take forward, supported by investment of up to £700,000.

They included using technology in a new way to give us better management information that helps us prioritise investment at our service reservoirs, and introducing a modification to the treatment process at one of our largest sites, Bran Sands. The investment we make will pay for itself within a two year period and will bring sustained efficiencies of £1.4m a year after that.

We were so impressed with the ideas that we ran the competition again in 2018, and have made a commitment to run it every year for 2020-25. Starting from 2018 we included our supply partners too, to support open innovation and co-creation.

The two ideas we are taking forward from the 2018 competition, with an investment of £650,000, will deliver annual sustained efficiencies of £400,000.

## 7.2 Transformational innovation to deliver efficiency post 2020

continued

### Investment in retail efficiency

We are the frontier company for retail efficiency when allowing for the high index of multiple deprivations in the areas that we serve. This is something that we are proud of, particularly as it is of great value to our customers.

During the 2015-20 period, we made significant investments in our new CC&B systems. This, coupled with our balanced focus on debt management, support to our customers who need additional help and advice, and our aim to eradicate water poverty, will ensure that we continue to maintain our frontier position.

Our new CC&B system replaces five different disparate systems that have been in operation across our operating areas for 20 years or more. Having one system to operate will deliver efficiencies in terms of manpower. The new system also offers greater flexibility and more choice to our customers. One particularly important change will be the ability to offer any day dates for direct debit. This will encourage more customers to move to direct debit, thereby securing payments and resulting in improved cash flows, fewer defaults and a reduced need to remind customers to pay.

The new system allows us to move to full data sharing. This will enable us to maintain our leading performance in the area of bad debt by better targeting those customers who need support and better identifying customers who are not paying through the Department for Work and Pensions and energy industry data. This additional data will also allow us to make more intelligent collections decisions.

We have identified direct target efficiencies of £1.1m (2-3% of opex) pa from the new billing system as a result of:

- Increased first time resolution because all of the data will be in one system;
- More efficient billing and appointments; and
- Improved cash flow and lower bad debt as a result of greater direct debit flexibility (for example we can now offer any day, fortnightly and weekly direct debits).

When the new system is fully integrated with our new omni-channel customer experience platform we will be able to make more intelligent call and contact routing decisions. This will allow more personalised services and first contact resolution which will in turn increase customer satisfaction levels. It will also mean that we can offer appointments to customers in a more efficient way.

#### Ofwat IAP test areas



Our customer advisors will be provided with the customer's history and a predicted reason for the call, which means they will be able to deal with the call more quickly and efficiently.

Finally the ability to use our customers' contact data and the move to more digital interactions will allow us to implement lower cost forms of communication such as email, SMS and e-billing in place of more costly postal routes.

### Think Digital

We recognise that digital services, both web and voice based, are increasingly popular and deliver services more efficiently and at the time of the customer's choosing. We have an ambition to deliver an unrivalled digital customer experience and our new digital platform, Think Digital, is an important part of our customer and retail service offerings.

By making our digital services easier to use we expect to see a greater volume of customers moving to these channels. This will allow us to improve our service offering while improving our cost to serve as the less complex customer issues will be handled through these channels.

We will also offer apps to encourage our customers to interact with us, giving them greater control in the service they receive and more flexibility in their payment methods.

The high percentage of contacts we currently receive via phone and email for simple customer requests – which could be delivered via the website – demonstrates the opportunity to increase customer satisfaction and free up contact centre resource. Our overall aim is to have 50% of interactions starting and ending on digital channels by 2020 and then to grow this from thereon while continuing to offer customers choice in channels of contact.

We estimate the move to a digital offering should generate efficiencies of at least £1m pa, 2% of our opex (depending on the rate and level of customer take up of the service).

### Future efficiencies from 2020

To sustain our frontier position up to 2025 we will continue to develop the functionality and integration of our systems and to invest in developing the skills of our people. As part of our IAM programme we will better integrate our asset data management which will allow us to make further enhancements in our customer service performance. This will improve our retail efficiency by reducing failure and removing some of the reasons why customers contact us. This will also allow greater self-service of water and wastewater operational issues through our new digital platforms.

## 7.3 Base modelled totex (as defined in Ofwat’s March 2018 consultation)

### Our approach to assessing our base totex efficiency

We have worked hard to make sure that we are an efficient water and wastewater company, and know that our customers support this.

We strongly support the use of an independent baseline for setting totex.

As such we are also supportive of Ofwat’s approach of making comparative efficiency assessments. In the absence of competition, this approach is an appropriate way to replicate competitive market pressures. We also support the use of an upper quartile efficiency baseline, and it is this that we have used to analyse our efficiency position.

We are pleased that Ofwat has recognised that additional funding should not be allowed to help inefficient or underperforming companies reach the upper quartile position (either through base or enhancement totex). We urge Ofwat to reject all enhancement totex proposals that are designed to bring a company to an upper quartile outcome performance level. Customers should not have to pay for inefficient or underperforming companies to improve.

#### Ofwat IAP test areas



### Assessing our position in relation to Ofwat’s base totex cost models

In March 2018, Ofwat issued 101 efficiency models that are intended to assess the relative efficiency of each company in relation to the rest of the industry. The models cover the five price control areas and are a mix of disaggregated (single service) and aggregated (multiple services) models.

We assessed our efficiency position in relation to these models with support from the consultancy firm EY. This section summarises the findings.

In our response to Ofwat’s consultation, we set out our views on which of the models were the most effective and reliable, with an overall preference for the more stable medium aggregated models (Network Plus, Resources Plus).

We put forward our view that aggregated models such as network plus, resources plus and wholesale are more reliable and are less dependent on individual company decisions on accounting allocations and operational trade-offs between the sub-services that create volatility and uncertainty. EY has confirmed for us that the choice of models within the sub-service generates more volatility than the choices for the aggregated ones.

We have assessed our position using the average of the models for each category. We have also assessed our efficiency for each category (disaggregated, medium and high level aggregation). This generated a high, central and low range of possible models, baselines and upper quartile levels.

For the wholesale models, our analysis has been based on cost modelling support from EY.

The data in Tables 1 and 2 is supported by EY’s analysis of Ofwat’s models and the industry cost assessment datashare. We have averaged the model results for each sub-service category. EY reconciled its modelling results to those provided by Ofwat in the March consultation.

### Water wholesale service efficiency

The table indicates that, using the average results of the 48 Ofwat water models, we are generally at or near upper quartile for all sub-services, except water resources. This is particularly true for the medium aggregated models of network plus and resources plus.

**Table 1: Results of the water service efficiency models**

	NES 2016/17 actual costs	Upper quartile efficiency target	Gap to upper quartile £m
Sub-service:	£m, base totex modelled costs		
Water resources	30	17	13
Water treatment	62	72	-10
Water distribution	115	105	10
Water network plus	181	188	-7
Water resources plus	95	103	-8
Wholesale water	210	208	2

Our plan therefore proposes a significant catch up adjustment for water resources to reach upper quartile efficiency. We expect to start with lower costs than the upper quartile baseline for water network plus.

### Wastewater wholesale service efficiency

The table indicates that, using the average results of the 39 Ofwat wastewater models, we are generally above upper quartile for all services. This is particularly true for the medium aggregated models of network plus and bioresources plus.

## 7.3 Base modelled totex (as defined in Ofwat’s March 2018 consultation)

continued

**Table 2: Results of the wastewater service efficiency models**

Sub-service:	NES 2016/17 actual costs	Upper quartile efficiency target	Gap to upper quartile £m
£m, base totex modelled costs			
Sewage collection	61	56	5
Sewage treatment	63	63	0
Wastewater network plus	125	136	-11
Bioresources	11	22	-11
Bioresources plus	74	87	-13
Wholesale wastewater	136	143	-7

We therefore expect to start our plan with lower costs than the upper quartile baseline for both wastewater network plus and bioresources.

### Note on income treated as negative expenditure – bioresources

In this analysis, we have included the income treated as negative expenditure (taken from the cost assessment data), as these are part of the modelled costs for sludge treatment and are under management control. The level of renewable income for bioresources is a critical part of the management decision to invest in bioresources treatment processes and should therefore be treated as part of the assessment of the efficiency of that process.

We included this point as part of our response to Ofwat’s consultation.

### Household retail efficiency

With respect to the retail models, our analysis has been based on cost modelling support from Economic Insight. Economic Insight replicated Ofwat’s models and we have used its analysis. We have averaged the results by sub-category.

#### Ofwat IAP test areas



**Table 3: Results of the household retail service efficiency models**

Component:	NES 2016/17 actual costs	Upper quartile efficiency target	Gap to upper quartile £m
£m, base totex modelled costs			
Bad debt costs	19	20	-1
Other retail costs	26	25	1
Combined household retail	45	47	-2

The table indicates that, using the average results of the 14 Ofwat retail models, we are generally more efficient than the upper quartile. This is particularly true for the aggregated models.

### Our views on Ofwat’s base totex models

In general terms we support the approach that Ofwat has taken in relation to the base totex models. Our response to Ofwat’s consultation on the models (dated May 2018) set out our views in more detail.

In summary, it is our view that aggregated models are more reliable than disaggregated models; more reliance should therefore be placed on them.

We also believe that cost drivers that are within management control should be avoided. These would include, for example:

- The level of recent maintenance/ asset replacement, as these relate to past management decisions about asset maintenance and the decision to underinvest in the past should not be rewarded by higher allowances in future; and
- The volume of sewage collected, as this is determined by company decisions to separate surface water, for example through SuDS.

It is important that any schemes that help to deliver government priorities (such as SuDS) are not undermined by efficiency models that reduce cost allowances when they are delivered.

The quality of cost data in assessing the models is clearly key. In our view use of cost data that has been attributed poor confidence grades (asset age ranges) should be avoided where possible. We also consider that the retail combined models should include a deprivation driver, similar to those that are used in bad debt models.



## 7.3 Base modelled totex (as defined in Ofwat’s March 2018 consultation)

continued

Finally, we believe that negative opex must be included as a modelled cost when assessing efficiency (we assume that its omission in the original analysis May 2018 was not intentional).

We believe that there is wide sector support for many of these points, based on our observations at the industry workshop on cost assessment that was held in May 2018.

In this section we present a visual demonstration of our totex trends and position in relation to the possible range of the upper quartile baseline for each of the five controls, consistent with the results set out above.

We have shown our projections of base modelled totex against our view of the upper quartile baseline of Ofwat’s models as published on 29 March 2018. All of our forecasts beyond 2020 are net of the 1.5% pa stretching efficiency target that we have referred to previously.

We have defined base modelled totex in the same way as it is defined in Ofwat’s consultation, excluding enhancements, business rates, abstraction charges and third party costs.

The upper quartile has been calculated using industry 2016/17 costs, and all data is in 2017/18 prices.

### Water resources: setting a stretching target to reach UQ

The graph below compares our central view of the upper quartile target for base modelled totex against our business plan projections.

While we have experienced a peak in water resources base totex over 2012/13 to 2016/17, this was due to a series of capital maintenance schemes that have now been delivered. Our projections from 2017/18 onwards indicate a much lower level of ongoing expenditure. We anticipate returning to an upper quartile target through a combination of lower costs in 2017-20 and a stretch target from 2020 onwards.

#### Ofwat IAP test areas

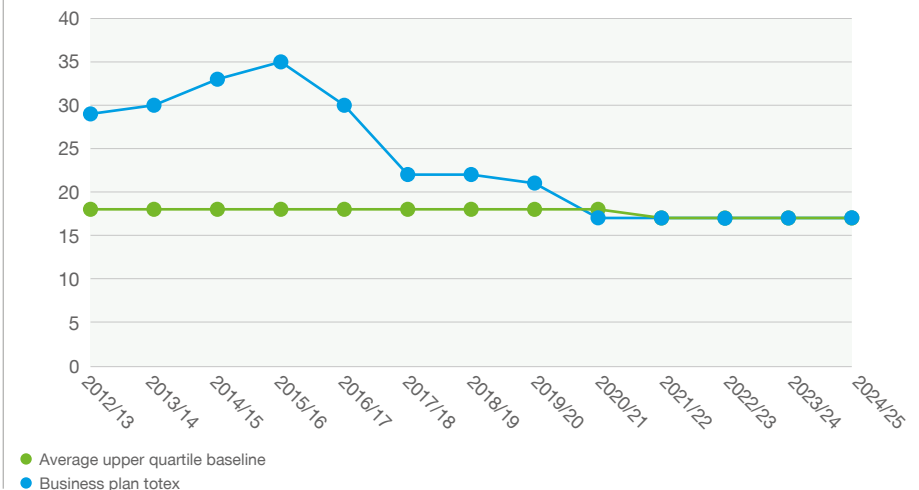


As shown in the graph below, we calculate that our water resources business plan totex forecasts should broadly match the average upper quartile position throughout 2020-25.

We agree with Ofwat that there may be circumstances, where there are new resource controls, where a gradual catch up to efficient levels of performance may be appropriate.

Although we agree with this approach in principle, we believe that a more reliable approach would be to use aggregated models such as water resources plus that are more closely related to how companies operate in practice and are not vulnerable to accounting allocations within what are typically integrated resource and treatment systems.

**WATER RESOURCES MODELLED BASE TOTEX**  
£m, 2017/18 prices



## 7.3 Base modelled totex (as defined in Ofwat’s March 2018 consultation)

continued

### Water network plus

The graph below compares our central view of the upper quartile target for base modelled totex against our business plan projections.

The years 2017/18 and 2018/19 have high levels of maintenance expenditure that return to a longer term trend from 2019/20 onwards.

The Horsley treatment works refurbishment was our single largest capital scheme over 2015-20 and has been included in maintenance forecasts. We are confident that a reversion to a lower level of maintenance expenditure as seen over 2012 to 2016 will be achievable.

As shown in the graph, we calculate that our water network business plan totex forecasts should broadly match the average upper quartile position throughout 2020-25.

### Ofwat IAP test areas



### Wastewater network plus

Our wastewater network plus efficiency position is ahead of upper quartile and places us as the frontier company for almost all wastewater network plus models.

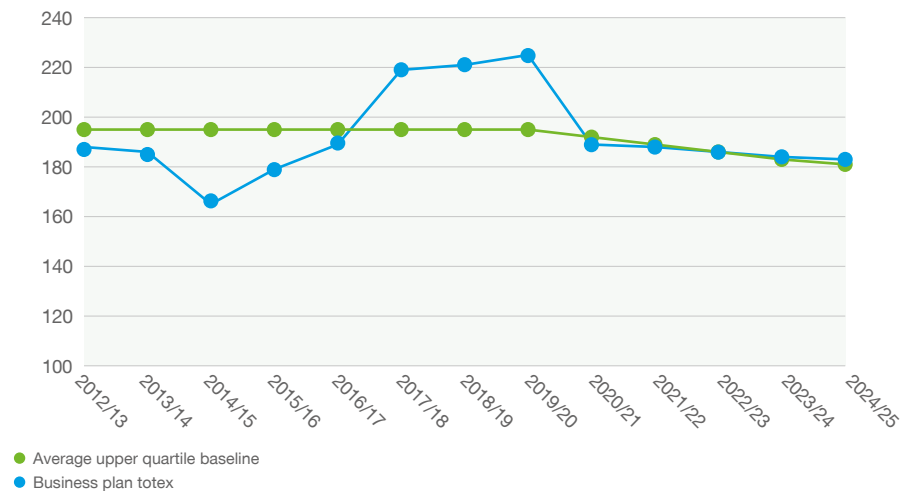
Our 2016/17 position is sustainable throughout 2015-20. Our aim is to remain the industry frontier company throughout 2020-25.

In setting our efficiency targets to stretch the frontier position, we are relying on the incentive to do so, as identified in Ofwat’s methodology (p148):

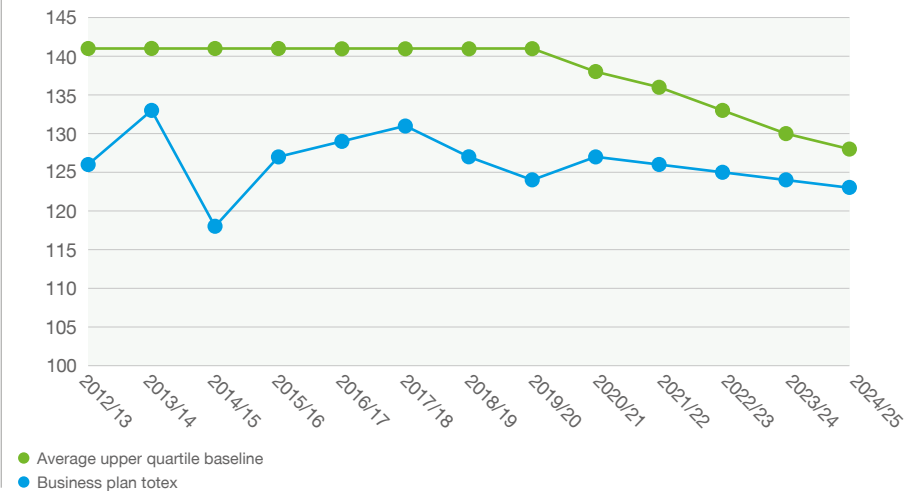
“We note that our approach means that most efficient or frontier companies, with very efficient cost forecasts, may receive a cost allowance which is higher than what is in their business plan. This approach provides a strong incentive for companies to seek efficiencies and submit stretching cost forecasts.”

As shown in the graph below, we calculate that our wastewater network totex forecasts should be more efficient than the upper quartile position throughout 2020-25.

**WATER NETWORK PLUS MODELLED BASE TOTEX**  
£m, 2017/18 prices



**WASTEWATER NETWORK PLUS MODELLED BASE TOTEX**  
£m, 2017/18 prices



## 7.4 Setting our stretching 2020-25 annual efficiency target

### Bioresources

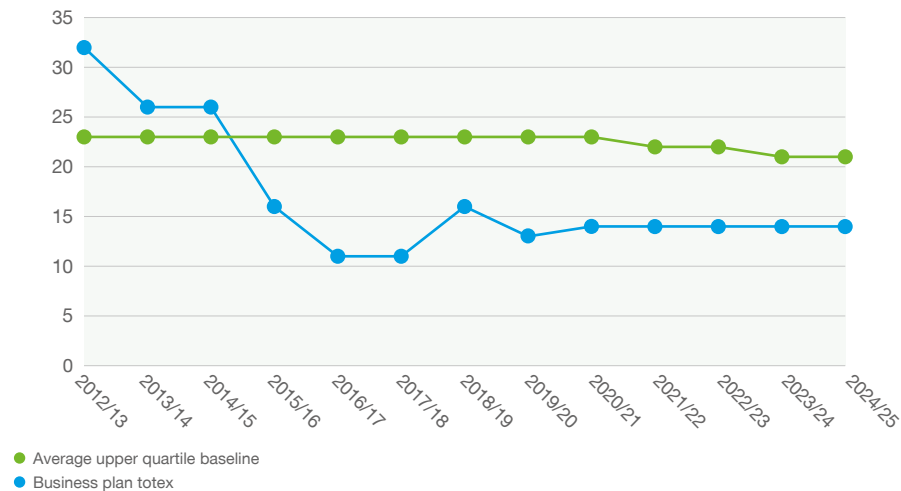
Once negative opex (renewables income) is included in the forecast opex, we are clearly the frontier company. Our net costs have fallen by 75% since 2011/12, once the full operational impact of our 100% AAD strategy takes full effect.

We therefore intend to keep stretching the efficiency frontier for bioresources over 2020-25.

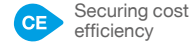
In setting our efficiency targets to stretch the frontier position, we are relying on the incentive to do so, as identified in Ofwat’s methodology.

As shown in the graph below, we calculate that our bioresources network totex forecasts should be at the industry efficiency frontier position throughout 2020-25.

**BIORESOURCES BASE MODELLED TOTEX**  
£m, 2017/18 prices



### Ofwat IAP test areas



**By 2025, our base modelled totex will therefore be around 7% or £26m pa lower than it would otherwise have been, thereby reducing customer bills by around 3%.**

### Setting our stretching 2020-25 annual efficiency target

We have set ourselves a challenging 1.5% pa efficiency target for all base modelled totex. The target was derived from an assessment of industry performance over 2015-20 and is additional to the stretching catch-up target for water resources.

By 2025, our base modelled totex will therefore be around 7% or £26m pa lower than it would otherwise have been, thereby reducing customer bills by around 3%.

### Real price effects and efficiency gains

We have commissioned reports from Economic Insight setting out forecasts of Input Price Inflation (IPI) for our wholesale price controls and Input Price Pressure (IPP) for the retail control over 2020-25. Economic Insight has developed detailed forecasts of our underlying input inflation across the wholesale controls. This was based on a range of analytically robust approaches, including the development of econometric forecasts. Importantly, the approach that was used avoids conflating any inefficiency that might be inherent in our actual costs.

To achieve this, Economic Insight created historical cost indices, using third-party data – and then analysed the relationship between these indices and the UK’s wider macroeconomic performance.

**A** See Appendix 7.1

**A** See Appendix 7.2

## 7.4 Setting our stretching 2020-25 annual efficiency target

continued

Drawing together the various analyses that Economic Insight developed, the following tables summarise the central estimates of IPI by wholesale price control area. These have been used (in combination with the scope for efficiency savings) to arrive at wholesale cost escalation factors and to help inform our projected baseline costs.

The IPI central forecasts are summarised as follows:

Service	IPI		
	Opex	Capital maintenance	Capital enhancement
	% pa	% pa	% pa
Water resources	2.22	3.23	3.05
Water network plus	2.23	3.23	3.05
Wastewater network plus	2.28	3.23	3.05
Bioresources	2.19	3.23	3.05
Retail household	2.50	-	-

Source: Economic Insight Reports, NES PR19 RPE Tables 1-4, NES PR19 IPP Table 1

The IPI and IPP values are all higher than the CPIH forecasts of 2% pa, which suggests that water industry input costs will increase faster than the CPIH index.

We have therefore proposed positive Real Price Effects (RPEs) for all services, with more significant increases for capital expenditure.

Service	RPE		
	Opex	Capital maintenance	Capital enhancement
	% pa	% pa	% pa
Water resources	0.22	1.21	1.03
Water network plus	0.23	1.21	1.03
Wastewater network plus	0.27	1.21	1.03
Bioresources	0.19	1.21	1.03

It should be noted that our efficiency assumption of 1.5% pa more than offsets all of these RPEs, thereby generating real terms net reductions in base totex costs.

### Setting efficiency targets of 1.5% pa

We noted the KPMG slides on Total Factor Productivity (TFP) from Ofwat's workshop of 15 March 2018 and agree with the desire to set stretching frontier efficiency targets. In our view, however, KPMG's approach 'double counts' the 2015-20 efficiencies by adding a totex and outcomes effect on top of the TFP frontier shift.

KMPG indicates PR14 outperformance from 3% to 11%. At a central estimate, this would be around 7.5% in total or 1.5% pa. This outperformance has been delivered during a period where a totex and outcomes regime has been in place. Any gains from this approach are therefore included in the industry outperformance of that period.

This 1.5% pa efficiency frontier shift experienced over 2015-20 should, in our view, be the basis for an annual frontier efficiency target for 2020-25.

#### Ofwat IAP test areas

 Securing cost efficiency

**An efficiency target of 1.5% pa is an extremely challenging target for any company that is already at the upper quartile or frontier for all five controls. It is higher than the 0.5% to 1% high case scenarios suggested in the report by Economic Insight.**

An efficiency target of 1.5% pa is an extremely challenging target for any company that is already at the upper quartile or frontier for all five controls. It is higher than the 0.5% to 1% high case scenarios suggested in the report by Economic Insight.

We have though concluded that a stretching target of 1.5% pa across base modelled totex is an appropriate level of ambition for us as an upper quartile company.

When this is combined with our stretching water resources target, we believe our overall efficiency targets are extremely challenging. These will only be met through a step change in efficiency due to innovation. We have set out earlier on in this section many of our plans for delivering these efficiencies.

## 7.5 Unmodelled base totex

Under the models in Ofwat's consultation from March 2018, unmodelled base totex covers abstraction charges, business rates, third party costs, Traffic Management Act costs and pension deficit recovery payments.

We are conscious that all of these costs feed into customer bills and we have a duty to ensure that these are as efficient as possible. We propose to accept the risk of these costs increasing above CPIH over 2020-25.

### Abstraction charges

This section sets out actions to minimise abstraction costs.

#### Northumbrian abstraction charges

In 2016/17, we relinquished around 20,000 MI/a of Kielder supported abstraction licences at Low Worsall. This was a reduction of more than 4% of our total Northern area licensed volumes. The licensed volumes were no longer required.

With a legislative requirement to recover the unchanged fixed costs, the Northumbria EA was obliged in 2017/18 to increase the Kielder Source Factor from 3 to 9 to compensate, thereby increasing our total abstraction costs by £6m on a sustained basis.

The Northumbria EA area exactly matches our NW operating area, so there is little scope for any cost sharing with other abstractors. We hold more than 95% of all of the Northumbria EA Region licences and smaller abstractors

are exempt from the source factor adjustment that the EA has used to rebalance their costs. Our relinquishing unused licences therefore has no impact on the total abstraction charges that we must pay.

Our response to IAP action NES.CE.A1.2 has more details.

#### Essex & Suffolk abstraction charges

As our ESW operating area is a water stressed region, there are no excess Essex & Suffolk licences to relinquish in this area.

#### Business rates

Our water business rates increased by £11.3m from £25.2m in 2016/17 to £36.5m in 2017/18 due to the revaluation of business rates, implemented on 1 April 2017. Our rates charge will increase further to £42.7m in 2019/20 as a result of a further assessment by the VOA. The revaluation applies until 2020/21, at which point there will be another revaluation. We have not included any additional cost that may arise from the 2020/21 revaluation in our plan.

**A** Business rates evidence can be found in Appendix 7.3 and 7.4

#### Third party costs

We have confirmed that, for all controls, income from third parties meets or exceeds third party costs, so there are no net costs to customers for these activities.

#### Ofwat IAP test areas

**CE** Securing cost efficiency

We do not intend to submit any cost adjustment claims in our business plan for any of the five price controls.

## 7.6 Cost adjustment claims

### We do not intend to submit any cost adjustment claims in our plan for any of the five price controls.

This is predicated on the assumption that Ofwat retains the exclusions from the cost models as set out in the March 2018 consultation – specifically: abstraction charges, business rates, third party costs and enhancement expenditure. We also assume that Ofwat includes a deprivation cost driver in the retail cost assessment models, consistent with the six bad debt models.

We have, as Ofwat suggests, taken an 'in the round' approach, recognising that our operating circumstances can often increase some costs but reduce others. This is particularly true for our water service, which covers two very different operating areas at either end of the country.

### A high bar for cost adjustment claims

We agree with Ofwat's preference for a high bar for considering cost adjustments. The majority of cost adjustments in PR14 were for enhancement schemes, and with these excluded from the base totex models, there should be a much reduced requirement.

We support the high materiality thresholds for claims and the calculation of materiality as the net value of the claim (ie excluding any amount already in the modelled cost baselines).

We note the series of stringent tests as set out in Appendix 11, Box 2 of the final methodology and agree that cost adjustment claims should require a significant level of evidence before consideration.

### Cost adjustments that are industry-wide should be applied to all companies

We believe that any successful cost adjustment that has implications for the whole industry should be applied to the whole industry modelled costs (ie included in the cost models). A cost adjustment of this type is effectively an adjustment to the cost assessment models and should be treated as such for all companies.

## 7.7 Enhancement schemes

Our plan proposes significant expenditure on schemes relating to the WINEP programme (both water and wastewater) and on resilience schemes (again both water and wastewater). We also propose supply demand expenditure including new development, network reinforcement and metering.

The water resilience schemes focus on the creation of a resilient integrated water grid network. The wastewater resilience schemes relate to network resilience, too critical to fail schemes and reducing flood risk to properties in the future.

**A** See Appendix 3.2

**A** See Appendix 3.9

### Making sure that enhancements are efficient

All of the costings for the enhancement schemes have come from our internal costing system (iMOD).

iMOD has been independently assessed and benchmarked by Mott MacDonald against peer organisations and was deemed to be industry leading in 'needs identification and solution development', 'cost model generation' and 'estimating methodology'.

Benchmarking of costs produced by iMOD against industry data shows iMOD to achieve a minimum of 'aligned' status, with half of the costs achieving 'robust' status.

iMOD is an engineering scoping and cost estimating software system, developed for our business, that brings project scope definition, whole life costing and tender evaluation together in one integrated system.

iMOD comprises a suite of 50 engineering scoping models and a cost database, which with a minimum of input criteria that is readily known at project inception, can provide a detailed capex, opex and whole life costing for a range of business issues.

Supplier tender submissions can be entered directly into the system to allow tenders to be automatically checked against the iMOD asset based cost database. This enables tender evaluation to be carried out with a limited resource requirement as well as providing enhanced confidence in a project's affordability. On completion outturn costs are captured in the system as part of the agreed project closeout procedure.

#### Ofwat IAP test areas



**Our menu choice effectively set a 6% efficiency target for each wholesale services. To date we are outperforming even that stretching target, particularly for wastewater.**



**In PR14, we were the only company to submit totex menu choices that were more stretching than those implied by either the business plan submission or the final determination.**

## 7.8 Independently evidenced track record of delivering efficiency over 2015-20

### Totex efficiency: PR14 actual compared with PR14 final determination

In PR14, we were the only company to submit totex menu choices that were more stretching than those implied by either the business plan submission or the final determination.

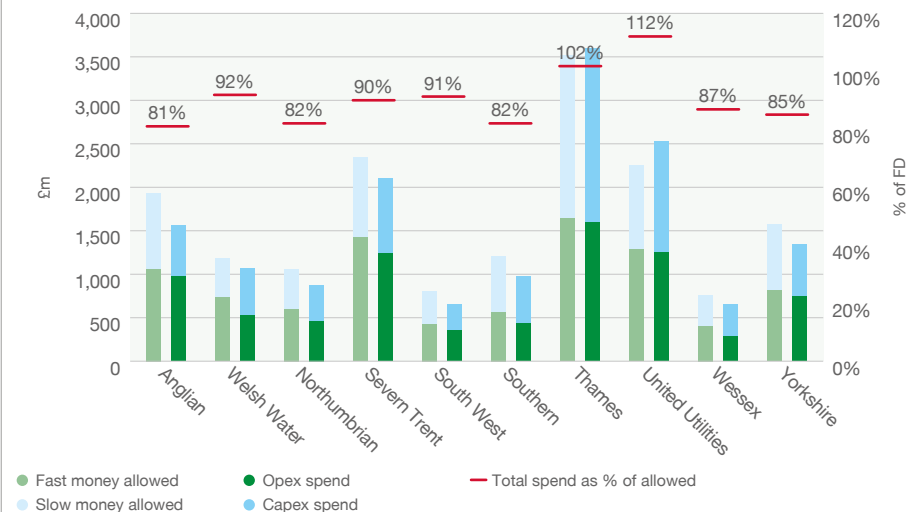
Our menu choice effectively set a 6% stretching efficiency target for each wholesale service. To date, we are outperforming even that stretching target for wastewater and retail household.

To date (2015/16 to 2017/18), we have outperformed the PR14 final determination and the industry for all three PR14 services.

Outperformance	Outperformance of PR14 final determination	Outperformance of industry average
Water wholesale	3%	4%
Wastewater wholesale	25%	18%
Retail household	11%	12%

Source: APR Tables 4B & 4F, industry data 2017/18, cumulative totex

### NWL SPENT LESS THAN ITS TOTEX ALLOWANCE IN 2015/16 AND 2016/17



Source: Companies' performance reports (March 2017), Ofwat, Moody's

## 7.8 Independently evidenced track record of delivering efficiency over 2015-20 continued

This outperformance is also confirmed by Moody's analysis, which suggests that we have outperformed all of the water and sewerage companies apart from one. This is shown in the graph on the previous page taken from Moody's note on 28 December 2017. This shows that we have spent 82% of our totex allowance in 2015/16 and 2016/17. This is evidence that we can continue to be an upper quartile efficient company.

### RoRE impact of totex efficiency

As a complementary measure of efficiency, from the analysis carried out by Ofwat, for the first two years of 2015-2017, we have delivered the third highest level of totex efficiency of any water company as measured in RoRE terms.

Our totex efficiency impact on RoRE of 2.4% is the third highest in the industry.

Source: Ofwat Service Delivery Report 2016-17, page 6

Note – Totex efficiency is in green, the blue shows the additional RoRE impact of outcomes.

### Ofwat IAP test areas



### A graphical analysis of totex performance to date

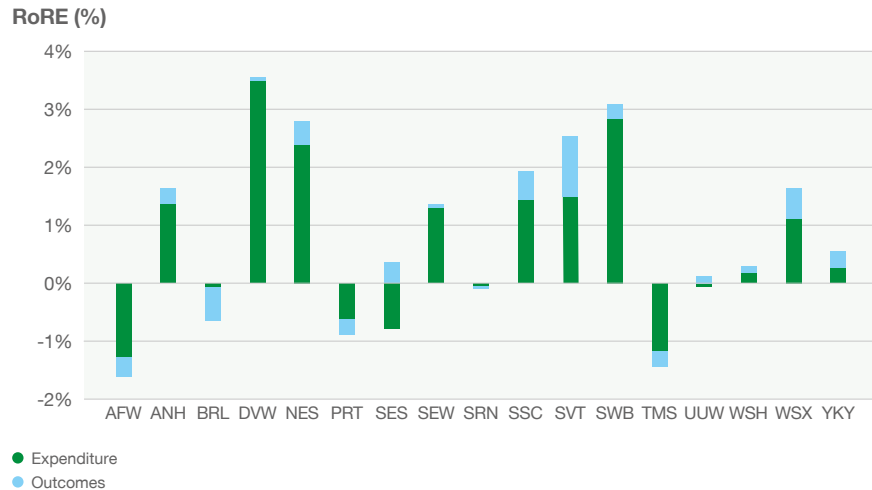
All data is taken from company APRs, Table 4B.

### Water wholesale

We have consistently outperformed the PR14 water final determination, and the industry average performance to date.

For 2017/18, the cumulative NWL totex is 97% of the final determination (Table 4B, 2018 APR), still outperforming the final determination and likely to be ahead of industry performance.

### RoRE PERFORMANCE – OUTCOMES AND EXPENDITURE ONLY



\* Expenditure performance includes the RoRE impact of both wholesale water and wastewater totex spending vs allowances as well as spending on both retail controls.

### CUMULATIVE 2015-18 WATER TOTEX ACTUAL VERSUS PR14 FD



All data is taken from industry 2018 APRs.

## 7.8 Independently evidenced track record of delivering efficiency over 2015-20

continued

### Wastewater wholesale

We have consistently outperformed the PR14 wastewater final determination, and are the frontier company for wastewater.

For 2017/18, the cumulative NWL totex is 75% of the final determination (Table 4B, 2018 APR), consistently well ahead of the PR14 final determination and likely to be setting the frontier industry performance.

Our totex projections for the whole of 2015-20 confirm that this outperformance is sustainable.

### Ofwat IAP test areas



### Household retail

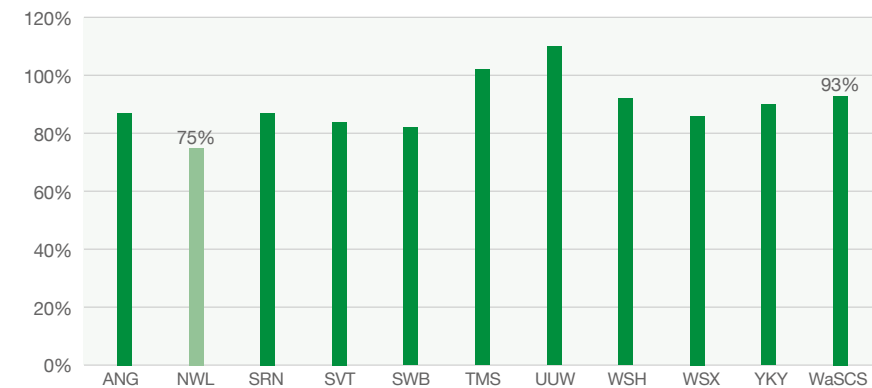
We are delivering at around the likely upper quartile level of efficiency given the overall industry efficiencies since PR14.

For 2017/18, NWL outperformance is 89% of the FD. This outperforms the industry average and should keep us at an upper quartile level. Our projections for the whole of 2015-20 confirm that this outperformance is sustainable.

### Wholesale unit cost models – a simple cross check

While we recognise that Ofwat's econometric models are more complex, we feel there is significant value in carrying out a cross check using a simple unit cost approach. We have set out a series of tables below that divide 2016/17 base modelled totex by the most significant cost driver, to arrive at a unit cost for each water and sewerage company.

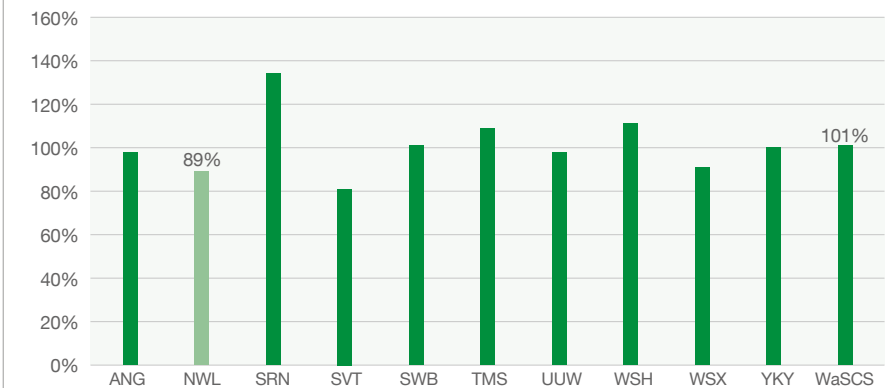
CUMULATIVE 2015-18 WASTEWATER TOTEX ACTUAL VERSUS PR14 FD



- 2016/17 Water wholesale
- Cumulative 2015-20 Water wholesale

All data is taken from industry 2018 APRs.

RETAIL HH 2017/18 ACTUAL VERSUS PR14 FD



- 2016/17 Water wholesale
- Cumulative 2015-20 Water wholesale

All data is taken from industry 2018 APRs.



## 7.8 Independently evidenced track record of delivering efficiency over 2015-20 continued

In line with the Ofwat models of March 2018, we have excluded abstraction charges, business rates and third party costs from the modelled base totex. We have used the cost drivers mandated by Ofwat for the APR tables 4D and 4E. We agree that these are a reasonable starting point to understand relative efficiency. Although we have used 2016/17 as the most recent set of data, we have carried out this analysis over previous years and found broadly the same results.

**Data sources: APR 2016/17, Tables 4D & 4E**

### Wholesale: Unit cost models

#### Overall water ranking (water and sewerage companies only)

From the unit cost models below, if we weight the rankings by totex, we find that overall we are the most efficient water and wastewater company for water and wastewater services.

### Overall water ranking

Ranking	ANG	NWL	SRN	SVT	SWT	TMS	UU	WSH	WSX	YKY	Weight
Water resources £/MI abstracted	5	9	3	10	2	7	1	4	6	8	9%
Raw water distribution £/MI DI	10	3	2	5	7	4	6	8	1	9	3%
Water treatment £/MI DI	4	3	7	5	10	1	9	6	8	2	32%
Water distribution £/MI DI	4	1	5	3	6	9	7	10	8	2	57%
<b>Weighted ranking</b>	<b>3</b>	<b>1</b>	<b>5</b>	<b>4</b>	<b>7</b>	<b>6</b>	<b>8</b>	<b>10</b>	<b>9</b>	<b>2</b>	

### Overall wastewater ranking

Water and sewerage company ranking	ANG	NWL	SRN	SVT	SWT	TMS	UU	WSH	WSX	YKY	WASCS
Wastewater collection	4	5	10	3	7	6	1	9	8	2	34%
Wastewater treatment	5	1	8	2	10	3	9	7	4	6	46%
Bioresources	5	1	2	4	9	8	3	7	6	10	19%
<b>Overall weighted ranking</b>	<b>3</b>	<b>1</b>	<b>8</b>	<b>2</b>	<b>10</b>	<b>4</b>	<b>5</b>	<b>9</b>	<b>7</b>	<b>6</b>	

Note: We have excluded the water only companies from this analysis to simplify the tables.

### Ofwat IAP test areas



### Private sewer mapping

The work we have carried out to map the transferred sewer network is a good example of Working Smarter, an approach that supports the generation and implementation of new ideas.

When the private sewer network was transferred in 2011, we were legally required, and had an operational need, to map the entire network, an estimated 13,500km of drains and sewers, with very limited records.

The obvious approach appeared to be traditional surveying but we calculated it would take around 15 years to collect the missing information. It would also be expensive, costing £10m in the first five years alone.

Our Asset Planning, Sewerage Support and Information Services teams worked together to draw up sewer rules, then created a model to infer the position of the sewers. Our approach included using our understanding to constantly improve the rules.

This approach dramatically reduced both the time and cost of the project, delivering a map of the whole transferred network in just three years for £1.7m (an 83% saving). We are developing our approach further by complementing it with aerial survey data to identify manhole covers and further improve the confidence level of the inferred map.

# 8.0

8.1 Rates of return

8.2 Cost recovery rates

8.3 Financeability

8.4 Financial resilience

8.5 Sharing of benefits

# ALIGNING RISK AND RETURN

This section explains the approach in our business plan to risk and return in order to ensure that our finances are sound and stable. We feel that this plan package achieves a fair balance and allows both customers and investors to share in the benefits of outperformance.

## 8.1 Rates of return

**We have proposed significant bill reductions for customers from 2020/21, to pass on the gains made from efficient totex and financing efficiencies made over 2015-20. We have then proposed steadily reducing bills for the remainder of the period, which is what our customers have told us they want.**

We are satisfied that our plan is financeable and consistent with retaining our existing investment grade credit ratings. We will maintain our transparent capital structure, with no securitisation, and conservative level of appointed business gearing below 70%. We have also demonstrated that our plan is financially resilient and that we have the flexibility to manage material adverse risks arising. The plan is balanced and will allow both customers and investors to share in the benefits of any outperformance through a combination of the automatic regulatory sharing mechanisms and the additional ones we propose in Section 8.5.

**184** ODIs are set out in detail in Section 4

We feel the ODIs give an appropriate focus on service performance within our wider risk and return package. The overall ODI range is consistent with both customer views and the final PR19 methodology; and our proposed ODIs are aligned with those aspects of service that customers most value. The ODI range is also broadly symmetrical, with a slight weighting towards penalty, resulting in a fair balance between customers and investors for both risk and reward.

### Cost of capital

We have applied the early view of the cost of capital set out in table 10.2 of the final PR19 methodology guidance and have applied this consistently to each of the four wholesale price controls, both for existing and post-2020 RCV. We have also adopted consistent annual inflation assumptions of 2% for CPIH and 3% for RPI.

This produces a wholesale cost of capital of 2.3% real, applying RPI, and 3.3% real, applying CPIH. We have assumed a 50:50 blend between RPI and CPIH, which gives an effective real wholesale cost of capital of 2.8%.

### Retail margin

We have assumed a pre-tax retail margin of 1% for household retail activities, as set out in Section 10.8.2 of the final PR19 methodology guidance. NWL exited the non-household retail market in April 2017 therefore we do not include any non-household retail margin in our plan.

### Cost of debt

We agree with the separation of the cost of new debt from embedded debt and the indexation of the cost allowance for new debt. This was well trailed and evidenced in the PR19 methodology consultation.

However, we remain concerned about the use of a 70:30 ratio for embedded to new debt within the cost of debt calculation. This implies that the proportion of new debt is 30% on average over the 2020-25 period. Given that new debt is zero at the start of the period, this implies that new debt must reach c.60% by the end of the period. This appears to be a flaw within the proposed approach, as we have highlighted to Ofwat previously.

#### Ofwat IAP test areas

**RR** Aligning risk and return

**<70%**

we will maintain our transparent capital structure with no securitisation, and conservative level of appointed business gearing below 70%

Our interpretation of the Europe Economics analysis is that the proportion of new debt will reach 30% by the end of the period, implying an average ratio of 85:15 for embedded to new debt over the course of the period.

**We note that Ofwat states that it will update its analysis following receipt of the business plans and we request that this ratio is adjusted, as otherwise it could have a material impact on the overall cost of debt.**

Within our plan, by 2025, 34% of our debt will have been raised in the period, for both refinancing of maturing debt and to fund our enhancement programme. Our average level of new debt over the period is 17%.

## 8.2 Cost recovery rates

This section sets out how we have set our PAYG ratio and RCV run-off rates.

Our customers have told us that they prefer stable bills over the long term. In particular, customers with lower incomes place great value on the predictability of their water bill. Customers also want bills to be set fairly so that they only pay for the proportion of the assets used to provide the services to them, to ensure there are no intergenerational cross-subsidies for customers.

We have set both the PAYG and RCV run-off rates on a long-term stable basis, using sustainable rates to ensure that there are no intergenerational cross-subsidies for customers.

We have not changed PAYG or run-off rates to solve financeability constraints or to advance cash flows, and they remain broadly in line with the natural rate.

### PAYG ratio

We have set our PAYG rates to reflect the annual natural rates implied by our 2020-25 totex forecasts. To calculate this we have taken the operating expenditure in each year, which represents the costs of running the business on a day-to-day basis, as a proportion of total totex, which also includes the costs of maintaining and enhancing our asset base to deliver services over the longer term. This is in line with our customers' strong view that maintaining assets is important

so that we can continue to provide services now and into the long-term, which they want to be delivered within a flat, stable and manageable bill (Resilience, Asset Health and Long-term Affordability Research, 2018).

We have calculated this separately for each year of each of the four wholesale controls. The underlying data has been taken from line 11 (operating expenditure) and line 21 (totex net of grants and contributions) of tables WS1 and WWS1. The outcome is summarised in the table below:

Average PAYG rate	2020-25	2015-20
Water wholesale	<b>58.8%</b>	69.8%
Wastewater wholesale	<b>35.5%</b>	53.0%

The PAYG rates for 2020-25 for both water and wastewater controls are lower than for 2015-20. This is because we have a significantly larger enhancement programme in 2020-25, therefore operating expenditure comprises a relatively smaller proportion of the overall totex.

### PAYG rates by price control

PAYG rates by price control	2020-25 PAYG rate
Water resources	90%
Water network plus	52%
Wastewater network plus	35%
Bioresources	41%

### Ofwat IAP test areas



### RCV run-off rates

We have set our RCV run-off rates to align to our long-term depreciation policy for the assets within each of the price controls. This has been informed by the current cost depreciation (CCD) charge reported in table 4G of our 2016/17 APR. We have not changed the expected useful asset lives used for calculating the depreciation charge, therefore the calculation remains consistent with the PR14 rates.

### Wholesale run-off rates

Run-off rate	Table 4G CCD £m	Opening RCV 1/4/2020 £m	Run-off rate	PR14 rate
Water wholesale	98.8	2,015	4.9%	4.8%
Wastewater wholesale	95.0	1,964	4.8%	4.4%

The wastewater run-off rate has increased marginally because the CCD is being compared to a lower RCV. This is the result of the projected reduction in our RCV at 2020 whereby we are sharing with customers the benefits of totex efficiencies and the Capex Incentive Scheme (CIS) RCV inflation adjustment delivered in the 2015-20 period.

### Comparison of PR14 and PR19 run-off rates

Run-off rate charge	PR19 2020/21 run-off £m	PR14 FD run-off 2019/20 £m
Water wholesale	103.5	104.4
Wastewater wholesale	99.4	94.3

Includes 2020/21 additions

Within water wholesale, we have allocated the run-off rate by calculating a standalone water resources rate, based on our asset lives, and deducting this from the total water wholesale run-off to calculate a water network plus rate. Similarly, for wastewater wholesale, we have calculated a standalone bioresources run-off rate, reflecting asset lives that are typically shorter, and deducted this from the total wastewater wholesale run-off to calculate a wastewater network plus rate.

## 8.2 Cost recovery rates continued

### Run-off rates by price control

	Opening RCV £m	Run-off rate assets at 2020	New assets from 2020
Water resources	300	5.6%	4.2%
Water network plus	1,715	4.8%	
Water wholesale	2,015	4.9%	
Bioresources	137	8.0%	3.2%
Wastewater network plus	1,826	4.6%	
Wastewater wholesale	1,964	4.8%	

For the run-off rates for investment post-2020 in water resources and bioresources, we have used the full asset lives as this is investment in new assets. As a result, the run-off rates for new assets are lower. The asset lives have been derived from the relevant columns of Table 2D of our APR.

We have chosen the reducing balance form of depreciation in our financial model for all controls, as this captures most closely the incremental impact on depreciation on new enhancement investment in the period. Using the straight line approach would result in customers being charged from 2020/21 for enhancements not delivered until later in the period.

### Impact on customer bills

As explained in Section 5 of this plan, bills will reduce by over 12.6% for our water and wastewater customers in real terms in 2020/21. This is due mostly to the lower cost of capital and the impact on RCV of the sharing with customers of totex outperformance in 2015-20. By keeping the PAYG and runoff rates close to their natural values, bills will reduce steadily in real terms for the remainder of the period. Our Resilience, Asset Health and Long-term Affordability Research (2018) found that customers have a strong preference for flat, stable and manageable bills both now and into the future.

### Ofwat IAP test areas

**RR** Aligning risk and return

**14%**

Reduction in water bills by 2024/25

**17%**

Reduction in wastewater bills by 2024/25

## 8.3 Financeability

### Board statement on financeability

The Directors confirm, in the Board Assurance Statement in Section 10, that this plan is financeable under both our actual capital structure and Ofwat's notional capital structure. We have assessed financeability in the context of our overarching financial objective of retaining our existing investment grade credit ratings of BBB+ (S&P) and Baal (Moody's). We are not rated by Fitch.

Our assessment of financeability is based on our submitted business plan, as explained in this Section. We have further assessed the resilience of our plan if the principal risks and uncertainties facing the business were to crystallise, either separately or in certain combinations, and also under a range of plausible and severe scenarios specified by Ofwat.

**264** For more details on our resilience testing see Section 8.4

We are confident that we would be able to absorb the impact from any of these plausible scenarios in isolation, or in the combinations we have tested, and maintain our investment grade credit ratings by a combination of: efficient delivery of our outcomes and PCs in the remainder of the current price control period and in the period 2020-25; targeting RoRE outperformance in the next price control period by delivering exceptional levels of service and performance for our customers; and by application of the Board's flexible dividend policy.

### Our Finances Explained

We consulted with customers on how they would like us to report transparently on our financial structure. As a result, we published 'Our Finances Explained' on our website. It sets out our position in relation to ownership, investment, taxation, dividends and impact on customer bills, in a simple format co-created with our customers.

**A** See Appendix 1.2

We have explained how we have set revenues, wholesale totex and retail costs in other sections of this plan. Below, we explain how we have presented pension costs and taxation in our plan.

## 8.3 Financeability

### continued

#### Pension costs

NWL participates in a defined benefit (DB) pension scheme, Northumbrian Water Pension Scheme (NWPS), the assets of which are held separately in independently administered funds. Around 40% of current employees are active members of the DB scheme. The most recent actuarial valuation of the NWPS was at 31 December 2016 and reported a cash funding deficit of £290.6m. The accounting deficit position was £94.3m as at 31 March 2018 and was reported in accordance with IAS 19 in our Annual Report and Financial Statements.

The schedule of deficit repair contributions for the NWPS has set employers' contributions at £12.3m pa, with effect from 1 January 2018, increasing annually by RPI. In addition, NWL continues to make deficit reduction payments of £11m pa, with effect from 1 April 2015, increasing annually by RPI. Deficit reduction payments will increase by £2.6m pa with effect from 1 April 2021. The deficit reduction payments have been set with the objective of removing the deficit by 31 March 2031, which has been our long-term aim. The NWL appointed business will pay 98% of the contributions and deficit reduction in line with scheme membership.

We have prepared our plan on a consistent basis with Ofwat's Information Notice IN13/17, Treatment of companies' pension deficit repair costs at the 2014 price review, which committed to funding a proportion of our pension deficit payments until 2031/32.

#### Taxation

We publish our tax strategy each year in the APR and will continue to apply the transparent approach set out in this strategy in the management of our tax affairs. NWL does not use overseas finance structures for the purpose of raising debt finance. Funds raised in the bond market have been raised via Northumbrian Water Finance plc, a wholly-owned UK-based finance subsidiary.

We have set approached tax charge in accordance with Ofwat's final PR19 methodology guidance. The tax allowance required by the appointed business in 2020-25 has been modelled on a standalone basis and uses a corporation tax rate of 17% throughout the five year period. The rates for capital allowances are those currently enacted and we have not made any adjustment for previously disclaimed capital allowances. We use an independent industry tax expert to provide advice on the allocation of capital expenditure

#### Ofwat IAP test areas

**RR** Aligning risk and return



**We have a simple and transparent capital structure with no whole business securitisation for the regulated business.**

for tax purposes and have used the same advisor in the preparation of our business plan. We are not aware of any planned changes in accounting standards that could have a significant tax impact.

**A** See Appendix 8.1

#### Capital structure

We have a simple and transparent capital structure with no whole business securitisation arrangements for the regulated business. In addition the Board aims to ensure that our gearing remains at a level to maintain our existing investment grade credit ratings. This will ensure that we can continue to raise finance as efficiently as possible for the benefit of our customers.

Our appointed business gearing at 31 March 2018, as reported in our APR, was 66% and we expect it to remain around this level up until March 2020. The PR14 adjustments to RCV will result in a step change in gearing of 3%, taking gearing to around 69%, and we expect it to remain below 70% over the 2020-25 period.

#### Efficient financing

We have continued to raise debt efficiently in the current price control period. NWL's weighted average cash interest rate was 4.34% at the end of March 2015. In AMP6 to date we have borrowed £250m from the European Investment Bank (EIB), which was converted to index-linked through financial swaps, and issued Eurobonds totalling £600m at competitive rates of between 1.6% and 2.5%.

As a result, our weighted average cash interest rate as at 31 March 2018, as reported in our APR, has fallen to 3.34%. This demonstrates the efficient capital structure and approach taken by NWL to ensure the lowest cost of borrowing over AMP6 so as to continue to drive enduring benefits for customers.

We are conscious that uncertainty around the impacts of Brexit could result in the loss of access to further low cost funding from the EIB.

We currently have cash resources and substantial undrawn committed (£350 million) five year bank facilities (maturing in December 2019) available to maintain general liquidity. We have initiated a process to renew these committed facilities for a further five to seven year term to help us maintain our financial resilience through AMP7.

## 8.3 Financeability

### continued

For the period 2020-25, we expect to have a borrowing requirement of over £1bn to fund both our enhancement programme and refinancing of debt maturing to 31 March 2025. In our plan, we have assumed that our debt financing requirements are met through a combination of fixed and RPI index-linked debt over 2020-25. In our plan, by 2025, 34% of our debt will have been raised in the period, for both refinancing of maturing debt and to fund our enhancement programme. We will monitor the debt capital markets throughout 2018 and 2019 and will consider all of the options open to us. This may include CPI issuance, depending on investor demand given the continued lack of a deep CPI debt market and continued delays from the Government's Debt Management Office regarding its intention to begin issuance of CPIH gilts.

### RCV

#### Adjustments for past performance

The real growth in RCV to March 2020 was set in the PR14 FD. This also included a number of mechanisms to adjust RCV to reflect performance during 2015-20. Section 9 describes the impact of these mechanisms, as well as remaining PR09 reconciliation adjustments. The most significant adjustments relate to rewards for achievement of ODIs, the sharing of totex outperformance with customers, and the close out of PR09 legacy adjustments.

### Leasing

IFRS 16, a new accounting standard for leasing, will come into effect for the financial year 2019/20. The standard will reclassify most operating leases as finance leases, resulting in net debt for the finance lease liability, and recognition of new fixed assets.

As required by Information Notice 18/09 Operating leases in PR09, we have made a one-off adjustment to RCV of £12m for operating leases in existence as at 31 March 2020. This reflects the NPV of the future cash flows for operating leases, discounted at the real WACC. We have based our assessment on the operating leases disclosed in our Annual Report and Financial Statements for the year ended 31 March 2018.

#### Ofwat IAP test areas



**Our overarching financial objective is to retain our existing investment grade credit ratings.**

### Credit ratings

Our overarching financial objective is to retain our existing investment grade credit ratings, and we have tested our financeability in this context.

We maintain credit ratings with two of the leading credit rating agencies: S&P and Moody's. Our current credit ratings are BBB+ (negative outlook) from S&P and Baa1 (negative outlook) from Moody's. These represent strong investment grade credit ratings and underpin our efficient cost of borrowing.

We have tested the financeability of our submitted business plan against the financial ratios used by our credit raters and against Ofwat's simplified ratio calculations. We have done this on both an actual and notional capital structure, comparing the results to the thresholds compatible with retaining our current credit ratings. We have used Ofwat's FFO/net debt measure throughout.

### Financial ratios (business plan)

The key financial ratios tested are gearing, adjusted interest cover, funds from operations divided by net debt and discretionary cash flow divided by net debt. Whilst the credit ratings relate specifically to NWL, both rating agencies take account of NWGL metrics in their methodologies, therefore we have also taken this into account.

We have also noted Ofwat's decision summary from its consultation 'Putting the sector back in balance', which implies that gearing of 70% and above would be viewed as materially above Ofwat's notional assumption.

The table below shows the results of the ratios. Our analysis of the ratios demonstrates that all of the key ratios remain within threshold guidance. This supports the Directors' assessment that the plan is financeable and is consistent with maintaining our existing investment grade credit ratings under both an actual and a notional structure.

Ratio	Threshold Guidance	Actual gearing		Notional gearing	
		2020-25 average	Min/Max	2020-25 average	Min/Max
Gearing (Net Debt/RCV)	<75%	69.2%	69.6%	61.0%	62.6%
Adjusted interest cover ratio	>1.4x	1.6	1.5	1.6	1.4
RCF/Net Debt	>6%	6.9%	6.7%	7.1%	6.5%
FFO/Net Debt	c.9%	8.7%	8.5%	9.9%	9.0%

## 8.4 Financial resilience

In addition to demonstrating that our business plan is financeable, it is important that we are financially resilient and manage the risks and uncertainties facing the business when they emerge.

The Directors formally assess the financial resilience of the company annually, consistent with the requirements of the UK Corporate Governance Code (UK CGC), and report the outcome of this assessment in the Viability Statement within the Annual Report and Financial Statements.

Extracts from the Viability Statement for the APR for the year ended March 2018 are reproduced below:

*The Directors believe that the company is well placed to manage its business risks and expect that the business can continue to operate effectively over the long term and, specifically, meet its financial obligations over the seven years to March 2025. In arriving at their opinion, the Directors have taken into account:*

- the licence which is in place on a rolling 25 year basis;
- the certainty on wholesale and household retail price controls to March 2020 provided by the 2014 FD by Ofwat, following its acceptance by the Board;
- the financial strength of the company at the balance sheet date and the fact that the company has a £350m five year committed bank facility as back up liquidity (maturing in 2019), which was undrawn at 31 March 2018;

- the company's draft business plan for the next price control period from 2020-25;
- the key financial ratios over the planning horizon of the company's medium term plan (MTP) to March 2025 as reflected in investment grade credit ratings;
- the Board's flexible dividend policy; and
- the principal risks and uncertainties facing the company and the mitigating controls, which are monitored by the Audit Committee, Risk & Compliance Sub-committee and Board.

*The Directors have chosen a period of seven years to March 2025 to assess the viability of the company to align with the business planning process for the regulatory price review period to March 2025.*

*The MTP has been stress tested under a number of plausible and severe adverse scenarios.*

*The scenarios were selected by the Board after considering the principal risk and uncertainties facing the company and the key economic and financial variables that could impact on the MTP.*

*The combined impact of multiple scenarios has also been tested.*

### Ofwat IAP test areas



**The Directors believe that the company is well placed to manage its business risks.**

### Return on Regulatory Equity (RoRE) (See commentary on App26 for more details)

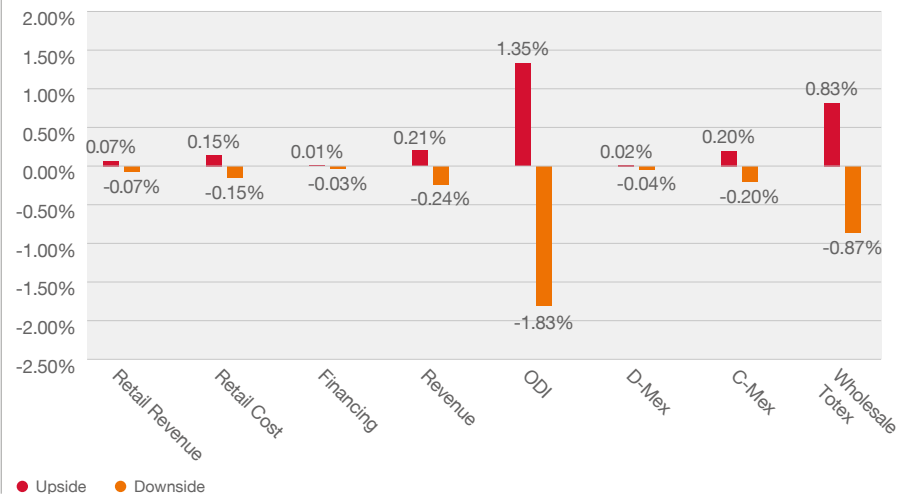
Whilst RoRE is not strictly a financial resilience measure, it does measure the level of risk and variation in returns under a range of scenarios.

We have used the scenario high and low P10/P90 data set in Table App26 'RoRE Scenarios' to assess the balance of 'risk and return' of our plan.

The commentary to Table App26 describes how we arrived at the P10/P90 ranges for each of the scenarios. We considered NWL and industry recent performance, variability in inputs costs and the extent of mitigation.

We have paid particular attention to assessing the P10/P90 ranges for ODIs, for which we used Monte Carlo analysis. We considered the degree of correlation of outcomes and the statistical distribution of the range of impacts.

**RoRE VARIATIONS FROM TABLE APP26**





## 8.4 Financial resilience

continued

The results of our RoRE scenarios are taken from the RoRE calculation page of the Ofwat Financial Model.

All calculations are done for the notional balance sheet:

Notional RORE	Upside	Downside
<b>Base</b>	<b>4.7%</b>	<b>4.7%</b>
Retail Revenue	0.07%	-0.07%
Retail Cost	0.15%	-0.15%
Financing	0.01%	0.03%
Revenue	0.21%	-0.24%
ODI	1.35%	-1.83%
D-Mex	0.02%	-0.04%
C-Mex	0.20%	-0.20%
Wholesale totex	0.83%	-0.87%
<b>Total</b>	<b>7.6%</b>	<b>1.4%</b>
Variation from base	2.8%	-3.4%

Thus, we can see a large range for possible RoREs, from 4.3% higher to 4.7% lower. As an illustration, an overall P10 performance would result in zero returns.

Thus, we can see a large range for possible RoREs, from 2.8% higher to 3.4% lower. This RORE range is consistent with Ofwat's expectations as set out in the final methodology.

### Stress testing of our business plan

In addition to the APR Viability Statement, we have carried out additional specific stress testing of our business plan in order to demonstrate its financial resilience. This includes specific stress tests defined by Ofwat.

The stress tests have been considered in three parts:

- The eight downside scenarios defined in Ofwat's consultation 'Putting the sector back in balance', as updated by the summary of Ofwat's decisions on issues for PR19 business plans;
- 16 NWL plausible and more severe scenarios as variants of the Ofwat stress tests; and
- Three additional NWL company-specific stress tests identified in the Viability Statement. The additional tests are:
  - Increased current tax payments resulting either from increased tax rates or transition to new IFRS accounting standards, causing increased net debt and gearing;
  - Increased defined benefit pension scheme deficit, leading to increased company pension contributions and higher gearing under rating agency methodologies; and
  - Impact of a major incident crystallising one of the company's principal operational risks, causing a significant cash outflow and modest increased net debt and gearing.

#### Ofwat IAP test areas



**We have carried out additional stress testing of our business plan in order to determine its financial resilience.**

The stress tests have been assessed in the context of NWL's overarching financial objective of retaining our investment grade credit ratings of BBB+ (S&P) and Baa1 (Moody's).

We have carried out a series of stress tests based on the downside scenarios as set out in Ofwat's final guidance of July 2018. These have been carried out using Ofwat's Financial Model, populated by our business plan table data. In this we have been supported by KPMG, who have conducted stress tests on our behalf and also carried out an 'agreed upon procedures' audit to support this work.

We have carried out all Ofwat stress tests with the full results.

**A** See Appendix 8.2

We have also considered what we believe to be a more plausible variation of the totex performance test, given our position as a leading company in terms of efficiency and service delivery and a number of more severe scenarios including this more plausible totex stress test in combination with other downside scenarios.

## 8.4 Financial resilience

continued

### Stress tests metrics & thresholds guidance

We carried out our stress tests against the following key metrics and thresholds:

Ratio	Threshold guidance
Gearing (Net Debt/RCV)	<75%
Adjusted interest coverage ratio (AICR)	>1.4x
RCF/Net Debt	>6%
FFO/Net Debt	N/A

The gearing and AICR metrics and thresholds guidance used are confirmed in the following Moody's note:

Source: Moody's note: 2018 outlook changed to negative as tough price review outweighs current performance: 15 January 2018, Exhibit 5

Moody's rating	RCV gearing	Adjusted Interest Coverage Ratio
A2	50%-60%	1.8x-2.5x
A3	60%-68%	1.6x-1.8x
Baa1	68%-75%	1.4x-1.6x
Baa2	75%-85%	1.2x-1.4x

Finally, we have set out later in this section the mitigation plans in place for any scenario where our target thresholds would not be met. In our view, all the plausible stress tests in isolation, or in the combinations we have tested, importantly including the NWL totex underperformance scenario described in more detail below, are either directly met or can be met through primary mitigation.

### Ofwat IAP test areas

**RR** Aligning risk and return

### The NWL totex underperformance scenario

Our revised plan impact on the IAP base totex results indicates that we expect to be at the upper quartile baseline for the wastewater controls, making a 10% underperformance extremely unlikely.

We have therefore amended the totex stress tests to a 5% variation in totex for water wholesale.

Price control	Comment on totex position	NWL Stress test
Water resources	NWL costs are at UQ by application of a stretch target	5%
Water network plus	NWL costs are at the UQ baseline	5%
Wastewater network plus	NWL costs are below the UQ baseline	0%
Bioresources	NWL is frontier company, costs are half of UQ baseline	0%
Retail HH	NWL costs are at the UQ baseline	5%

### Notional gearing

Finally, the full suite of stress tests has also been carried out under the notional gearing assumptions. As notional gearing (60%) is less than actual appointed gearing (65-70%), all the financial metrics have improved results compared to actual levels, so any mitigation is either not required or is required to a lesser extent than the actual basis.

**A** See Appendix 8.2 for the full results

## 8.4 Financial resilience

continued

### Addressing any stress test failures by mitigation

We have carried out an extensive range of stress tests based firstly on the eight downside scenarios set out in Ofwat's final guidance of July 2018. These have been carried out using Ofwat's Financial Model, populated by our business plan table data. In this exercise we have been supported by KPMG, who have conducted stress tests on our behalf and also carried out an 'agreed upon procedures' audit to support this work.

Additionally, we have also considered a further 19 NWL stress test scenarios, including what we believe to be a more plausible variation of a totex performance test, given our position as a leading company in terms of efficiency and service delivery and a number of more severe combined scenario tests also including more plausible tests, including the revised totex performance test. These are shown in the table below:

- Stress Test 12 covers a more plausible overall 3% totex overspend test, which we pass; and
- Stress Test 26 combines ODI penalty, totex overspend of 3% and higher cost of new debt, which is also passed post primary mitigation.

	Test	Pre mitigation	Post primary mitigation
1	Base case	Pass	Pass
<b>2</b>	<b>Ofwat Totex overspend 10%</b>	<b>Fail</b>	<b>Fail</b>
3	Ofwat ODI penalties	Fail	Pass
4	Ofwat Penalty (Appointee revenues)	Fail	Pass
5	Ofwat Bad debt cost shock	Fail	Pass
6	Ofwat High inflation	Pass	Pass
7	Ofwat Low inflation	Fail	Pass
8	Ofwat Debt refinancing	Fail	Pass
<b>9</b>	<b>Ofwat Combined scenario 10% totex</b>	<b>Fail</b>	<b>Fail</b>
<b>10</b>	<b>NWL Opex overspend 10%</b>	<b>Fail</b>	<b>Fail</b>
11	NWL Capex overspend	Fail	Pass
12	NWL Totex downside 3%	Fail	Pass
13	NWL Operational incident	Fail	Pass
14	NWL C-MeX and D-Mex penalties 2.4%	Fail	Pass
15	NWL C-MeX and D-Mex penalties 1.2%	Fail	Pass

#### Ofwat IAP test areas

Aligning risk and return

	Test	Pre mitigation	Post primary mitigation
16	NWL Revenue under-recovery	Fail	Pass
17	NWL Financing downside	Fail	Pass
18	NWL CPIH	Fail	Pass
19	NWL High interest and inflation	Pass	Pass
20	NWL High inflation (divergence)	Pass	Pass
21	NWL Very high interest & inflation	Pass	Pass
22	NWL Low interest and inflation	Fail	Pass
23	NWL Low interest (divergence)	Fail	Pass
24	NWL Low inflation (divergence)	Fail	Pass
25	NWL Very low interest & inflation	Fail	Pass
26	NWL ODI penalties, Financing downside and Totex overrun	Fail	Fail
27	NWL Tax increase	Fail	Pass
28	NWL Pension deficit	Fail	Pass

The majority of tests can be met after primary mitigation.

Our primary mitigations include targeted management actions, flexible dividend policy and single year 'look through'.

Thus, the only four stress test scenarios to fail post primary mitigation relate to the Ofwat very severe 10% totex or our severe 10% opex overspend scenarios (which assume a 10% overspend across each year of the price control period). All these stress tests are in our mind unrealistic scenarios to consider as robust indicators of our financial resilience. These scenarios, would require secondary mitigation through considering the NWL efficiency position resulting in more plausible totex scenarios, as well as a potential interim determination, given the severe cost consequences that underpin such scenarios. The mitigating effects of the correlation between macro-economic effects, CPIH and company costs should also be considered.

See Appendix 8.2

## 8.4 Financial resilience

continued

### Mitigation

#### Targeted management actions

Our ELT implements the Board's strategies and closely monitors performance. This includes making sure sufficient and suitable resources are applied to scrutinise performance and identify and manage risk. It also makes sure there is appropriate assignment of responsibilities, corporate structures and reporting lines and accountabilities, supported by annual positive assurance on systems and controls.

#### Flexible dividend policy

The Board's flexible dividend policy is demonstrated by the decisive actions we took in 2017/18 to make sure that we would be in a strong and stable financeable position for the remaining years of this price control and then for 2020-25 and beyond. It is this forward looking approach that should allow us to mitigate any short term revenue and cost shocks as set out in the stress tests.

#### Interim determination (opex increases)

Whilst NWL is not proposing any specific notified items, the substantial effects (SE) interim determination (IDOK) mechanism could apply should totex increase significantly for reasons beyond management control.

In practice, for NWL, this would mean an increase of 4% or more of opex would qualify for an SE IDOK. We would not anticipate this applying immediately at that threshold, but it would have to be considered as mitigation of any opex increase stress test scenario of more than 5% for example.

#### Correlation of macro-economic effects between company costs and CPIH/RPI

Significant cost shocks to the UK economy would impact the water industry. Macro-economic events that drive increased costs, such as changes in exchange rates or increases in energy prices will increase both company costs and CPIH as already seen in 2017/18 and 2018/19. In this way, the increase in revenue and RCV through an increase in CPIH/RPI will offset the impacts on company costs, although there would be a significant P&L timing difference which would arise as increases in allowed revenue would be lagged, whilst higher opex and index-linked debt costs arise immediately. Additional RCV growth would provide additional debt capacity which would help to cover the increased costs from a cash perspective.

#### Ofwat IAP test areas

- RR** Aligning risk and return
- CA** Securing confidence and assurance

Water companies are less exposed to broad economic trends such as recession or growth than other sectors as demand for water is generally price inelastic. In previous periods NWL has suffered from a significant fall in industrial demand during recessions. It is less exposed to this happening in future for two reasons. First, the decline of the industrial base and closure of some of our largest industrial customers means water income is not as reliant on a small number of very large industrial customers as it once was. Secondly, the introduction of a revenue control means water companies bear less revenue risk than under the previous price controls. Any shortfall in expected revenue is automatically adjusted for within the price control period, with the company only bearing the risk for up to two years.

The main impact of any recession on NWL is likely to occur through an increase to household debt driven by higher interest rates squeezing disposable income and increased unemployment.

#### Credit rating agency 'look through' of a single year shortfall

Credit rating agencies do not look at a single year in isolation when assessing the strength of credit metrics of companies. The agencies generally assess credit strength by considering forecast trends in key credit metrics over a number of years, typically over a three to five year horizon. The agencies will also take account in any assessment of a company's track record in taking decisive targeted actions, as well as the credit strength and support that may also be forthcoming from a company's ultimate shareholders.

#### Index-linked debt

The issuance of index-linked debt does mitigate some of the risks of variation in inflation, particularly when inflation falls below the 2% CPIH level forecast in the plan.

#### Mitigation statement

We are confident that we would be able to absorb the impact of any of the plausible stress test scenarios in isolation, or in combinations we have tested, and maintain our investment credit ratings by a combination of efficient delivery of our outcomes and PCs in the remainder of the current price control period and in the period 2020-25; targeting RoRE outperformance in the next price control period by delivering exceptional levels of service and performance for our customers; and by application of the Board's flexible dividend policy.

## 8.4 Financial resilience

### continued

Ofwat's methodology allows companies to make a case for the inclusion of notified items which would allow price limits to be reopened should certain circumstances arise that were not assumed at the price determination. Ofwat makes it clear that companies are expected to keep the use of notified items to an absolute minimum and that a high evidence threshold will be applied in assessing claims which should also make clear why this mechanism benefits customers (perhaps by allowing base modelled costs to be lower by excluding potential risks). The threshold at which a notified item would apply is also high (2% of turnover), which limits the value as a risk mitigation tool.

### Conclusions

In the Directors' opinion, our plan is financially resilient and remains financeable under all but the most extreme stress test scenarios. In the event of an extreme scenario arising, the Directors' remain confident that the company's capital structure provides sufficient flexibility to deal with significant adverse events.

#### Ofwat IAP test areas

- Delivering outcomes for customers
- Aligning risk and return
- Securing confidence and assurance



**Our plan is financially resilient.**



**The company's capital structure provides sufficient flexibility to deal with significant adverse events.**

## 8.5 Sharing of benefits

One of our business outcomes is that 'Our finances are sound, stable and achieve a fair balance between customers and investors'. This means that it is essential that any benefits of outperformance are shared fairly.

Whilst it is right and fair that customers should receive a share of the benefit of sustained outperformance, we also strongly support the concept of incentive based regulation. At the heart of such regulation is the imperative that good companies that perform better for their customers should earn a higher return than those that perform poorly.

### Sharing outperformance with customers

As described in more detail in Section 9, the PR14 price control included a number of benefit sharing mechanisms, specifically in relation to wholesale totex performance, revenue and ODIs. We have performed strongly in the current period and the benefits of this performance are being shared with customers in PR19, including through a significant reduction in our opening RCV at 1 April 2020.

The final PR19 methodology has also introduced additional benefit sharing mechanisms in relation to the cost of debt and taxation, which are broadly symmetrical between the company and customers and which we support.

In accepting the PR14 FD we viewed the overall 'risk and return' package as acceptable. In accepting the FD we felt that the company was best placed of all stakeholders to appropriately manage potential significant financial risks. In looking at our performance for the 2015-20 period, we are mindful that there are some areas where we have benefited from factors outside of our direct control, but importantly at the same time we have absorbed significant cost increases in other areas of business risk. It is therefore essential that these items are looked at together, in assessing what benefit it would be appropriate to share with customers in our PR19 business plan. The most notable items are as follows:

- One area where we may have outperformed is in relation to tax funding at PR14 to cover the expected cash tax cost of implementing IFRS accounting standards. This is described in more detail below but still remains an area of uncertainty at the date of submission of this business plan, as HMRC continues its processes to review our detailed 2015/16 tax computation.

- At the same time the company has experienced significant unfunded upward cost increases in relation to business rates following the publication of the 2017 revaluation listing. This revaluation has increased our annual business rates cash costs by £17m pa, despite us acting efficiently to challenge these significant cost increases.

**251** Section 7.5

- As noted elsewhere within this plan, our annual operating costs for the likes of energy and chemical costs have also increased markedly, the latter being significantly uplifted over the last two years post the Brexit vote.

Taking these last two points together shows that there is £50m of unbudgeted cost increases on these lines alone, that the company will have absorbed by the end of AMP6.

## 8.5 Sharing of benefits

### continued

Despite this we have proposed one additional voluntary benefit sharing mechanism, relating to the tax funding at PR14 which, should it arise (depending on the outcome with HMRC), we are proposing to use specifically to support our ambitious goal to eradicate water poverty and help customers with affordability issues, as described in more detail below.

We have considered two other mechanisms, requested by Ofwat, but do not propose any sharing of benefits in these areas, for the reasons explained below.

#### Use of PR14 tax benefit to support our zero water poverty goal

When we submitted our PR14 business plan, we believed, that the transition to IFRS accounting standards in 2015 by NWL would result in an additional cash tax liability of £50m. This item was fully explained in our PR14 business plan, and was challenged by Ofwat, but ultimately funded in our FD.

We have subsequently worked with our tax advisors to explore the tax treatment of the IFRS changes in more depth. We received a tax opinion that suggests that this liability should not now materialise. As noted above HMRC continues to work on our 2015/16 tax computation and this matter has not yet been finally resolved with HMRC.

Whilst our PR14 business plan submission reflected our belief and advice at the time that this was a real risk, in the event that our 2015/16 tax computation is finalised without any requirement to make payment for this matter, we propose the following actions to share the benefit with customers.

We will use the interest income on the unutilised tax funding to support our zero water poverty goal and other targeted customer support initiatives. We will report how this funding has been used to support our zero water poverty goal and other targeted customer support initiatives in our APR reporting.

**78** All interest earned on this funding will be used directly to support the actions set out in Section 3.2 of this Plan

#### Ofwat IAP test areas

**OC** Delivering outcomes for customers

**RR** Aligning risk and return

**CA** Securing confidence and assurance



**We strongly support the concept of incentive based regulation.**



**We have proposed an additional voluntary benefit sharing mechanism to support our ambition to eradicate water poverty.**

#### Voluntary cost of debt sharing mechanisms

We agree with the separation of the cost of new debt from embedded debt and the indexation of the cost allowance for new debt. This was well trailed and evidenced in the PR19 methodology consultation.

For embedded debt, we agree with Ofwat's statement that 'sharing mechanisms may weaken company incentives to manage financing risks and could expose customers to risks associated with companies' actual financing structures'. As a consequence, we remain unsure of why Ofwat then goes on to say that 'where companies outperform the notional cost of debt that underpins our cost of capital, we reiterate that we expect companies to consider adopting their own outperformance sharing mechanisms'. This implies that either Ofwat expects variations in the cost of debt performance to be shared asymmetrically or that companies with costs higher than the notional cost of debt would be allowed to pass a proportion of those on to customers. Either approach has significant consequences that require careful consideration.

Finally, and crucially, reductions in the cost of embedded debt are already shared with customers. Embedded debt typically has a tenor of 20-25 years. The industry might keep outperformance for up to five years, before the reduction is passed on to customers. In this way, the debt cost outperformance sharing proportion for customers is already significantly greater than 50%.

For these reasons, we propose to retain the risks of embedded debt performance against the determination levels during the period and do not intend to pass these risks on to customers. This will maximise incentives for us to raise debt efficiently while sharing with customers any longer term gains at each price control point.

## 8.5 Sharing of benefits

continued

### Sharing benefit of high gearing

In the consultation, 'Putting the sector back in balance', Ofwat requested that companies with gearing levels materially above the 60% notional assumption in the methodology should propose mechanisms for sharing the benefit of this higher gearing with customers. This was subsequently updated to relate specifically to companies with gearing of 70% or higher.

As described in Section 8.3 above, the Directors believe that our plan is financeable and will result in appointed gearing of less than 70% throughout the 2020-25 period. However, in the event of our gearing exceeding 70% in any year, we propose to adopt the benefit sharing mechanism set out by Ofwat in the 'Putting the sector in balance' position statement.

### Dividend policy

The Board has a policy which takes into account the principle of incentive based price cap regulation, including operating, investment and financing performance. When declaring dividends, the Directors consider the company's five-year plan and give due consideration to business performance, the prospects of the company and the principal risks facing the business.

Specifically, the Board determines the level of dividend declared by reference to:

- The company's ability to finance its functions;
- The company's cumulative financial performance and past outperformance; and
- Maintaining the company's investment grade credit ratings.

The Directors also have regard to:

- The company's operational performance and the level of service provided to its customers; and
- Employees' interests and specifically compliance with the pension deficit repair plan agreed with the Pension Trustee in respect of the NWPS, as submitted to the Pensions Regulator.

Over the course of AMP6 to date, the dividends paid have reflected sector leading efficiency and outperformance of efficiency baselines. The flexibility of the dividend policy has been clearly demonstrated in 2017/18 when the Directors took targeted action to reduce the level of dividend payments for the year and the remainder of the price control period in order to continue to meet the company's overarching financial objective of retaining our existing investment grade credit ratings as we head into PR19.

For modelling purposes only within this 2020-25 plan, we have set our nominal notional base dividend yield at 4.52% of regulatory equity, in line with the WACC. We will be fully transparent in the reporting of our dividend in the

#### Ofwat IAP test areas

**OC** Delivering outcomes for customers

**RR** Aligning risk and return

**CA** Securing confidence and assurance



**Dividends paid have reflected sector leading efficiency and outperformance.**

APR. In setting our dividend level, we will fully consider whether our obligations and promises to customers have been met and will take fair account of employee interests such as the pension deficit.

### Performance related pay

Our financial statements set out in full our transparent approach for performance related pay for executives. Between 40% and 50% of maximum Executive Directors' remuneration is linked to performance through the Short Term Incentive Plan (STIP) and the Long Term Incentive Plan (LTIP).

The purpose of the STIP is to focus on delivering key performance targets in the year across a balanced scorecard of measures. The balanced scorecard measures our performance across the full range of our strategic themes, focusing particularly on the areas that customers have told us are important to them. The targets have been set at stretching levels so as to drive year on year performance improvements on a path to achieve our national leader vision and deliver improved services to our customers.

The purpose of the LTIP is to focus on key business metrics, engender a longer term view, encourage a one team approach, remain competitive in the executive market and encourage the retention of our key people.

Looking forward, our Remuneration Committee will review the measures within our STIP and LTIP and consider whether or not it would be appropriate to revise our balanced scorecard approach in the context of the company's objectives for 2020-25.

Where changes are made to performance related pay policies, we will set out transparently in the APR the reasons for changes, including how these take due account of both customer and employee interests.

# 9.0

# ACCOUNTING FOR PAST PERFORMANCE

[9.1 Our track record](#)

[9.2 How we are performing in 2015-20](#)

[9.3 Scheme specific performance commitments](#)

[9.4 Performance on major incidents](#)

[9.5 Ensuring transparency](#)

[9.6 Reconciliation of 2015-20 performance](#)

[9.7 Summary of PR14 revenue and RCV adjustments](#)

Providing evidence of our past performance helps build our customers' confidence that they will receive excellent service in future. This section includes a full explanation of our actual and forecast performance against our ODIs in the period 2015-20. This helps inform the setting of future targets, and is necessary to calculate adjustments to our price controls from 2020.

While the reconciliation of regulatory performance measures is important, we also recognise the value to customers of other aspects of our activities. We monitor performance against these activities (which contribute to our vision to be national leader), using a balanced scorecard.

Our customers' trust in us will be influenced by our track record and by any external validation. For this reason we open the section with a snapshot of some of the many awards we have won recently.



## 9.1 Our track record

Our track record is a reflection of the amazing work that the people who work for NWL do every day. We have been recognised for our exceptional performance and innovative approach to putting customers at the heart of everything we do.



**Queens Award for Enterprise: Sustainable Development 2014**

We were awarded our second Sustainable Development Award for upholding exemplary standards in supplying drinking water and treating wastewater (the first was awarded in 2009).



**BQF UK Excellence Award 2018**

The judges awarded us the UK Excellence Award for our positive impact on the world, through improving and advancing the economic, environmental and social conditions in the communities we serve.



**Utility of the Year Award 2013 and 2017**

We impressed the judges with our 'all round consistent out-performance' and they recognised us for being an outstanding example of a utility operating at the top of its game.



**Water Industry Achievement Awards Company of the Year 2018**

Judges were impressed by our work and performance on minimising supply interruptions and on sustainable drainage.



**British Water supply chain top water company 2018**

For the seventh time in eight years, we were named as the UK's top water company in the British Water 2018 annual performance awards, as voted by suppliers.



**Green Apple Environment Awards for Environmental Best Practice 2017**

We were recognised for our effective strategy, approach and results of our Every Drop Counts campaign which encourages behaviour change in water efficiency.



**Ethisphere 2011-2017**

We are the only water company in the world to have been included in the World's Most Ethical Companies® list for seven consecutive years.



**Living Wage 2015-2018**

We are accredited by the Living Wage Foundation as a Living Wage employer, reflecting our belief that a hard day's work deserves a fair day's pay.



**RoSPA 2012-2018**

We were recognised for our well-developed health and safety management systems and our culture and commitment to the wellbeing of not only employees but all those who interact with us.



**Business in the Community 2018**

The judges said we are putting responsible practices at the core of our business, and are helping to create healthy communities with successful businesses at their heart.

## 9.1 Our track record continued

Our vision is to be the national leader in the provision of sustainable water and wastewater services. We are clearly focused on achieving this vision and use our balanced scorecard to measure our progress towards it.

Each year we set a range of measures on our balance scorecard (which currently has 35 measures) to include our PCs and also other important measures such as employee engagement, employee volunteering activity and stakeholder trust. We set our targets for these measures based on what would be considered 'leading' in each area, whether that is leading in the water industry or more broadly. If we are already leading, or if we think that the existing industry leading score is not ambitious enough then a more ambitious target would be set as appropriate. For example, we base our NPS targets on companies that deliver exceptional customer service, such as Amazon.

### Ofwat IAP test areas



Accounting for past delivery



**Our vision is to be the national leader in the provision of sustainable water and wastewater services.**

We also clearly articulate what our criteria to be the national leader is:

- We will have more areas where we have the leading score than any other water company (more first places);
- All of our balanced scorecard measures will be at least above the average score for the industry; and
- We will be top for the industry SIM.

This approach is embedded across our business and our balanced scorecard and our progress towards national leader is shared face to face with all employees via bi-monthly team briefings. All of our people have a clear line of sight to what will help us to achieve our vision and what their role is in achieving it.

Although we have not yet achieved our vision to be the national water industry leader (by our definition outlined above), neither (by the same definition) has any other water company achieved national leader status. Over the last five years we have consistently been in the top three companies according to our 'national leader' definition.

We know that it will not be easy to achieve our vision, as we challenge ourselves to be the best across all areas of our business. Whilst, as the following pages show, we are clearly leading in many areas, we are driving our performance across all areas simultaneously and consistently.

The awards on the previous page demonstrate, independently, that we are making excellent progress towards our vision and gives us confidence that we will achieve it. We are particularly proud that this external recognition reflects leading performance across a broad spectrum of our business activities over a sustained period. We believe this externally verified and benchmarked, sustained high performance is an indicator of our ability to deliver this ambitious plan.

**“ Northumbrian Water Group has all round, consistent outperformance. The company is a recognised leader in its sector, a champion for its community and an outstanding example of utility operating at the top of its game. ”**

**The judges of Utility of the Year, 2017**

## 9.2 How we are performing in 2015-18 and forecasts for 2018-20

In the vast majority of cases we have met or exceeded our PR14 commitments. In instances where we have not done so, we describe here where we have put measures in place to make sure that we improve our performance.

Our past performance (2015-18) is presented in relation to the outcomes that we set at PR14 and the underlying MoS that contribute towards each outcome. We provide forecast information for the period 2018-20.

The following table shows when we have met (or are forecast to meet):

- Our promise and/or expect a reward
- When we were close to achieving but not incurring a penalty
- Any areas incurring a penalty

Measure of Success	Our promise (2017/18)	Our performance (2017/18)	Have we met our promise?			Are we forecast to meet our promise?	
			2015/16	2016/17	2017/18	2018/19	2019/20
<b>Our customers tell us we provide excellent customer service and resolve issues quickly</b>							
Ofwat Service Incentive Mechanism (SIM)	n/a	86.4	●	●	●	●	●
Independent overall customer satisfaction survey (out of 10)	8.2	8.7	●	●	●	●	●
Domestic customer satisfaction (NPS)	32	44	●	●	●	●	●
<b>Our customers say our services are good value for money and we work hard to keep water and wastewater services affordable for all</b>							
Independent value for money survey (out of 10)	7.9	8.2	●	●	●	●	●
CCWater value for money survey – Water Services Northumbrian Water	83%	78%	●	●	●	●	●
CCWater value for money survey – Sewerage Services Northumbrian	84%	78%	●	●	●	●	●
CCWater value for money survey – Water Services Essex and Suffolk	73%	71%	●	●	●	●	●
<b>Our customers say they feel informed about the services we provide and the importance of water</b>							
Independent survey on keeping customers informed	n/a	94%	–	–	●	●	●
<b>We always provide a reliable supply of water</b>							
Interruptions to water supply for more than 3 hours (mm:ss per property per year)	05:56	05:23	●	●	●	●	●
Properties experiencing poor water pressure	216	186	●	●	●	●	●
Water mains bursts (per year)	4586	4214	●	●	●	●	●
Leakage (Ml/d) – Northumbrian area per day	137	137.1	●	●	●	●	●
Leakage (Ml/d) – Essex and Suffolk area per day	66	66.2	●	●	●	●	●
<b>Our drinking water is clean, clear and tastes good</b>							
Overall drinking water quality compliance	100%	99.938%	●	●	●	●	●
Discoloured water complaints (per year)	2908	2532	●	●	●	●	●
Satisfaction with taste and odour of tap water (no. of complaints per year)	987	978	●	●	●	●	●

## 9.2 How we are performing in 2015-18 and forecasts for 2018-20

continued

The following table shows when we have met (or are forecast to meet):

- Our promise and/or expect a reward
- When we were close to achieving but not incurring a penalty
- Any areas incurring a penalty

Measure of Success	Our promise (2017/18)	Our performance (2017/18)	Have we met our promise?			Are we forecast to meet our promise?	
			2015/16	2016/17	2017/18	2018/19	2019/20
<b>Our sewerage service deals with sewage and heavy rainfall effectively</b>							
Properties flooded internally (per year)	186	96	●	●	●	●	●
Properties flooded internally (TDS) (per year)	228	199	●	●	●	●	●
Properties flooded externally (per year)	1318	944	●	●	●	●	●
Properties flooded externally (TDS) (per year)	2931	2726	●	●	●	●	●
Repeat sewer flooding (in the last 10 years)	496	38	●	●	●	●	●
Sewer collapses (per year)	58	46	●	●	●	●	●
Sewer collapses (TDS) (per year)	84	51	●	●	●	●	●
<b>We help to improve the quality of rivers and coastal waters for the benefit of people, the environment and wildlife</b>							
Pollution incidents (category 3)	115	58	●	●	●	●	●
Bathing water quality compliance (number of sufficient bathing waters)	32	34	●	●	●	●	●
Sewage treatment works discharge compliance (number of failures)	0	2	●	●	●	●	●
<b>We take care to protect and improve the environment in everything we do, leading by example</b>							
Greenhouse gas emissions (tCO <sub>2</sub> e)	172	163.5	●	●	●	●	●

Our PC to deliver Whitburn CSO scheme was achieved in 2017.

Implementation of our consolidated Customer Care and Billing (CC&B) system was slightly delayed. Our PC was to deliver this by 31 March 2018 but the decision was taken to delay this for a short period of time to avoid our busy annual billing period and, therefore, not put customer service at unnecessary risk. The system went live on 8 May 2018.

Our PC to publish an Annual Environmental Performance report was achieved, with 'Our Contribution' being published alongside our APR in July 2018.

## 9.2 How we are performing in 2015-18 and forecasts for 2018-20

continued

Our customers tell us we provide excellent customer service and resolve issues quickly.

Our customers say our services are good value for money and we work hard to keep water and wastewater services affordable for all.

Our customers say they feel informed about the services we provide and the importance of water.

### Ofwat IAP test areas



Accounting for past delivery

**+44**

we have continued to beat our PC by a substantial margin with an NPS score of +44 in the last year



**We were delighted to improve our SIM performance and achieve joint first place in the industry in 2016/17.**

We have grouped these three customer service outcomes together because they are closely linked. They encompass eight MoS:

- SIM;
- Our independent overall customer satisfaction survey;
- Domestic customer satisfaction, as measured by the NPS;
- Independent value for money survey;
- Independent survey on keeping customers informed; and
- CCWater’s three value for money surveys (covering water and wastewater services).

Each of these is considered below.

### SIM

From a score of 83.64 in 2015/16, we were delighted to improve our SIM performance and achieve joint first place in industry in 2016/17 with a score of 87.57. In 2017/18, we saw a slight drop in performance on the satisfaction survey, with our SIM score reducing to 86.4. This places us third out of the water and sewerage companies in England and Wales and fourth in the industry if the water only companies are included for 2017/18.

We are committed to improving our SIM performance further in 2018/19. Following the implementation of our new CC&B system and company focus on customer service, we expect to improve our SIM performance and return to a leading position in the sector.

### Independent overall customer satisfaction score

When considering our own independent overall customer satisfaction research, we maintained high results in 2015/16 and 2016/17 and progressed to achieve our best ever score of 8.7 in 2017/18. We are delighted that customer satisfaction has achieved such a high level and that it is increasingly better than our PC of 8.2. Our forecast performance for 2018/19 and 2019/20 is to continue to surpass our PC for this measure.

We do not propose to continue this measure in 2020-25, as SIM is being replaced by C-MeX. This will cover the satisfaction of customers who have contacted us, along with those who have not. Due to the introduction of C-MeX, this bespoke measure is no longer needed and will be removed to prevent any duplication. We will still continue to measure and track this internally.

### Domestic customer satisfaction (NPS)

After achieving our best ever performance in 2015/16 for the NPS measure of customer advocacy, we have continued to beat our PC by a substantial margin with an NPS score of +44 in the last year. This continues to compare well with the UK leading businesses such as Apple, Amazon and John Lewis (according to Satmetrix, the independent company that conduct NPS surveys throughout the country), and remains above our PC of +32. Our forecast performance for the final two years of the 2015-20 period is to continue to surpass our PC for this measure.

We do not propose to continue this measure into the next plan as Ofwat will test the use of the NPS in the C-MeX pilot. The decision will be taken after the pilot as to whether or not to incorporate the NPS into C-MeX in some form. We have therefore chosen not to duplicate and no longer have this as a bespoke measure. We will continue to measure and track this internally.

## 9.2 How we are performing in 2015-18 and forecasts for 2018-20

continued

### Independent value for money

Our scores in the independent value for money survey have remained consistent over the last three years at 8.2 out of 10, surpassing our PC of 7.9 and demonstrating that we have maintained our customers' overall satisfaction with the services we provide since 2015. We are forecasting to maintain this excellent performance over the final two years of the 2015-20 period with scores that exceed our PC.

### Independent survey on keeping customers informed

We have achieved a consistent performance in the independent survey on keeping customers informed over the past three years. 94% of our customers told us that they were satisfied that they were supplied with all of the information they want in order to feel informed about the services we provide. We expect that this performance will remain consistent over the final two years of the 2015-20 period.

When we produced our business plan for 2015-20, this measure was new and we did not have any historical information for us to set a PC. We said that we would do this at the end of 2017 and would set the PC at the best of the three years performance that we have achieved. Keeping this promise, our PC up to 2020 is 94%.

For 2020-25, our outcome in this area has evolved to cover ensuring that customers help shape our services, in addition to keeping them informed. Our approach is set out in detail in Section 3.1 of our business plan. The section also explains how we maintain transparency and provide customers with appropriate information, maintaining trust and confidence, within the Ofwat CMF. Both of these aspects mean that this PC is no longer required.

### Satisfied with value for money of water and sewerage services – Northumbrian region

CCWater publishes annual research on customers' perceptions of their water and sewerage companies and one element relates to value for money. For water services, following an increase from 77% in 2015/16 to 84% in 2016/17, our score has fallen slightly to 78% in 2017/18. We are pleased however that our score remains above the industry average of 72%. Our PC is set at 83%. We aim to achieve our PC in the remaining two years of the current period.

Our result in the CCWater survey for value for money for sewerage services was industry leading at 84% in 2016/17, however has fallen slightly in 2017/18 to 78%. We are pleased however that our score remains above the industry average of 75%. Our PC is set at 84%. We aim to achieve our PC in the remaining two years of the current period.

Although this survey will continue, with results being tracked and published, we do not propose to continue this measure into the next plan due to the introduction of our water poverty measure, which focuses on affordability and value for money for customers who need additional support.

### Ofwat IAP test areas

Accounting for past delivery

## 8.2/10

value for money consistent over the last three years at 8.2 out of 10, surpassing our PC of 7.9

## 94%

of our customers told us that they were satisfied that they were supplied with all of the information they want

### Satisfied with value for money of water services – Essex & Suffolk region

In 2016/17, we were disappointed that the CCWater value for money results for ESW fell to 67% against our PC of 73%. Improving our performance in this area is important. We continue to work with customers to better understand how improvements can be made, and have increased our score in 2017/18 to 71%, almost regaining our PC of 73%. We aim to achieve our PC in the remaining two years of the current period.

Although this survey will continue, with results being tracked and published, we do not propose to continue this measure as a PC for 2020-25 due to the introduction of the new bespoke measure to eradicate water poverty.

### We always provide a reliable supply of water.

Five MoS support the delivery of this outcome, including water supply interruptions, properties experiencing low pressure, water mains bursts and leakage in our operating areas.

## 9.2 How we are performing in 2015-18 and forecasts for 2018-20

continued

### Water supply interruptions

Throughout the period 2015-20, we have continued to deliver industry leading performance on water supply interruptions, although a challenging year in 2017/18 saw the average interruption time per property increase to five minutes 23 seconds due to a number of large supply interruption events. Our performance remains better than our PC of five minutes 56 seconds and far better than average industry performance of 11 minutes. Our exceptional performance in this measure has generated a forecast ODI reward of £7.9m for the period 2015-20. We are forecasting to continue to outperform our PC in the final two years of this period.

### Properties experiencing poor pressure

We are pleased to report that our performance with regard to properties experiencing poor pressure has seen year-on-year reductions throughout the 2015-20 period, from 221 properties on the low pressure register in 2015/16 and 199 in 2016/17 to 186 properties in 2017/18.

Properties experiencing low pressure is one of our asset health measures and compliance with our PC of 216 properties is assessed on three-year average performance, giving a performance for 2017/18 of 202. We are forecasting the continuation of these reductions over the final two years of the 2015-20 period.

We have decided to cease reporting low pressure as a PC for 2020-25. However, it will continue to be monitored as an element of our Guaranteed Standards of Service scheme to make sure that pressure is adequate for customer needs. For PC purposes, customer satisfaction with pressure correlates poorly with whether or not pressure meets or exceeds a fixed threshold, and is better measured using the new C-Mex measure.

### Water mains bursts

We have experienced challenging weather conditions across all of our operating areas in 2017/18 which affected our performance with regards to leakage and water mains bursts. Freezes and rapid thaws increase the likelihood of pipes fracturing and make leakage management particularly challenging.

Following our lowest ever number of water mains bursts in 2015/16, the challenging weather conditions in 2016/17 and 2017/18 are reflected in our water mains bursts performance, with 4,273 and 4,214 water mains bursts each year respectively. Our forecast performance is to continue to reduce the number of water mains bursts experienced for each of the final two years of the 2015-20 period. Water mains bursts is one of our asset health measures and compliance with our PC of 4,586 bursts is therefore assessed on three-year average performance, giving a result of 4,102 bursts for 2017/18.

### Ofwat IAP test areas

Accounting for past delivery

**We have continued to deliver industry leading performance on water supply interruptions, 5 minutes 23 seconds.**

### Leakage (NW and ESW)

Managing network leakage has been unusually challenging over the past few years, especially in Essex & Suffolk where our leakage levels are at/close to the lowest levels in the UK already. We comfortably met our PCs in 2015/16, and daily average leakage levels were 134.7 MI/day in NW (PC; 137.0 MI/day) and 62.4 MI/day in ESW (PC; 66.0 MI/day). During this year we started a project in NW to better manage high pressure in the network because this is a cause of leaks. We already have pressure management in place in ESW, but we needed to optimise this. We saw leakage fall to some of the lowest levels we have ever recorded. However, the contrasting weather patterns through 2016/17 and 2017/18 combined to make leakage management very difficult.

In 2016/17, we saw rising levels of leakage through the summer and autumn in our operating areas, at a time of year when we are usually able to drive leakage down. We responded with increased focus on leak detection work and by reducing repair (find to fix) times. This was very effective, and by the end of the year we had reduced the average daily leakage level to 133.8 MI/day in NW (PC; 137.0 MI/day).

However, in ESW the weather conditions were more extreme. The amount of rainfall recorded in ESW between July and December 2016 was significantly lower than in previous years, resulting in very dry ground conditions. This led to ground movement and an increase in leaks. When rainfall came in early 2017, further ground movement caused even more leaks to break out. The burst rate in the final quarter of the year was 60% higher than in the previous five years. It was not possible to recover performance before the end of the year and the final average daily leakage level was 68.1 MI/day (2.1 MI/day above our PC).

We are investing additional resources in order to improve leakage. This includes recruiting more leakage technicians and noise loggers to help identify leaks more quickly, renewing customer supply pipes in some of our highest leakage areas and promoting our Every Drop Counts campaign to help fix leaky household appliances. Through that work we expect to meet our leakage PCs for both NW and ESW in 2018/19 and 2019/20.

## 9.2 How we are performing in 2015-18 and forecasts for 2018-20

continued

We continue to prioritise leakage detection and repairs in both areas. We are investing heavily in permanent 'correlating noise loggers', and trained our current employees to use them. We purchased 4,000 in our ESW operating area with a further 1,000 mobile units also procured. These loggers enable less qualified employees to carry out leak detection and will allow parts of the network to be surveyed faster and much more thoroughly.

We also made leakage a key theme at our flagship innovation festival in summer 2017. A sprint and data hackathon uncovered a number of initiatives which are already being trialled and will deliver benefits well into the future. As the year was coming to a close we were just on track to deliver leakage levels on target in both areas when 'The Beast from the East' arrived with the worst winter conditions seen for a number of years. We are proud that water supplies were maintained in all operating areas but the impact on leakage was considerable. By the end of March 2018, the daily average leakage level was 137.1 ML/day in NW and 66.2 in ML/day in ESW, missing our PC levels by only a very small margin, and not incurring a penalty in either case.

### Ofwat IAP test areas



Accounting for past delivery



**On discoloured water complaints, we have consistently improved to our best ever performance over the 2015-20 period.**

2018/19 will see further pressure management schemes being implemented and optimised. The continued roll-out of the correlating noise loggers and new innovations will leave us well placed to drive leakage levels down further and we expect to better our leakage PCs in the run up to 2020.

### Our drinking water is clean, clear and tastes good.

This outcome is underpinned by three measures: overall drinking water quality, discoloured water complaints and satisfaction with taste and odour of tap water.

### Overall drinking water quality compliance

Following an improvement in our overall drinking water quality performance in 2015/16, with 99.957% compliance, our results for 2016/17 and 2017/18 were 99.936% and 99.938%, respectively. Out of the 75,000 tests carried out there were 57 failures in 2016 compared with only 45 failures in 2017. None of the failures represented a risk to health and our performance represents a very high level of compliance. The figures above relate to annual performance. Overall drinking water quality compliance, however, is one of our Asset Health measures and compliance with our PC of 100% is assessed on three-year average performance. This results in a 2017/18 performance of 99.943%.

Although we do expect some variation in performance levels due to the fact that samples are taken on a random basis, if our 2018/19 performance does not return to 2015/16 levels we may fail to meet our PC. We aim to improve our performance in the final two years of 2015-20.

We are committed to improving water quality and plan to achieve this through catchment and abstraction management to take the best quality raw water for treatment.

We are also on track to deliver our investment commitments outlined in our business plan for 2015-20. These included additional processing at our WTWs, better management of the water network through extending automated control systems and replacing more iron pipes in the distribution system. We will also continue to monitor performance carefully and take action when required. For example, we have responded to turbidity performance issues and plan to install new filters at six water treatment works by 2019.

However, since our outcome is measured as a three-year average, we would need to achieve our best performance ever in 2018/19 to achieve our PC. We are therefore forecasting that we will marginally fail this PC in 2018/19 and 2019/20.

For 2020-25, this measure will be replaced by the CRI. We are supportive of this new measure.

### Discoloured water complaints

With regards to discoloured water complaints, we have consistently improved to our best-ever performance over the 2015-20 period, with 2,532 discoloured water contacts for 2017/18. This performance has generated a forecast ODI reward of £1.07m across the 2015-20 period. The figures above relate to annual performance. Discoloured water complaints is one of our asset health measures and compliance with our PC is assessed on three-year average performance, where we achieved a performance of 2,776 in 2017/18 against our PC of 3,490. We expect that this performance will continue to surpass our PC across the final two years of the 2015-20 period.



## 9.2 How we are performing in 2015-18 and forecasts for 2018-20

continued

We have been working to improve discoloured water complaints for many years and the current good performance is the result of this work. When industry comparisons are made, however, we recognise there is still more to do. Our current strategy continues to 2019 and includes expenditure throughout the supply chain to reduce the creation and distribution of discolouration material coming from water treatment works and accumulating in pipes. From 2020 we aim to continue to reduce the occurrence of discoloured water and are preparing plans for this now. These plans include more automatic control, distribution mains replacement and WTW process improvements.

### Satisfaction with taste and odour of tap water

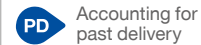
This measure reflects the number of times we have been contacted by customers reporting issues with the taste or smell of their water.

We received 978 taste and odour contacts in 2017/18, compared with 1,229 in 2016/17 and 1,225 in 2015/16. This level of performance places us second in the industry and is better than the PC of 987 contacts. An ODI reward payment of c £0.1m is available for the measure. This is equivalent to nine contacts at £11,000 per contact.

To continue to be upper quartile when compared with others, we have put in place an action plan for this measure because our PC is both important to customers and very challenging. Another reason is that customers who are dissatisfied with the taste or smell of tap water often buy bottled water. Better quality tap water is in line with our environmental aspirations, such as limiting the use of single-use plastic bottles.

To continue to meet our PC we are optimising treatment processes at our treatment works and are updating our websites to provide better and more up-to-date information about the taste and odour of tap water. We are also improving our knowledge of plumbing, so that when troubleshooting at a customer's property the issues can be found and resolved quickly. We are forecasting continued improvement in this measure across the final two years of the 2015-20 period that will continue to surpass our PC.

### Ofwat IAP test areas



# 978

978 taste and odour contacts in 2017/18. This level of performance places us second in the industry and is better than the PC of 987



**We have continued to reduce the number of properties flooded internally from the original public network, from 143 properties in 2015/16 to 96 properties in 2017/18.**

### Our sewerage service deals with sewage and heavy rainfall effectively.

Seven measures that relate to sewer flooding and sewer collapses contribute towards the achievement of this outcome.

#### Properties flooding internally

We have continued to reduce the number of properties flooded internally from the original public network, from 143 properties in 2015/16 and 119 properties in 2016/17 to 96 properties in 2017/18. This is significantly better than our PC of 186. This performance has generated a forecast ODI reward of £4.3m over the 2015-20 period. We are forecasting to maintain performance at similar levels for the remaining two years of the 2015-2020 period.

There was a slight decrease in the number of properties flooded internally from the sewer network which transferred into water company ownership in 2011 across the 2015-20 period, from 219 in 2015/16 and 215 in 2016/17 to 199 in 2017/18. This performance is better than our PC of 228 properties. We are forecasting to maintain performance at similar levels for the remaining two years of the 2015-20 period.

### Properties flooding externally

Following an initial improvement in our performance from 1,061 properties flooded externally from the original public network in 2015/16 to 839 properties in 2016/17, the number of properties affected has risen slightly to 944 properties in 2017/18. This remains significantly better than our PC of 1,318. We are forecasting to maintain performance at similar levels for the remaining two years of the 2015-20 period. Over the period, this performance has generated a forecast ODI reward of £2.1m.

The number of properties flooded externally from the transferred network has reduced from 2,730 properties in 2016/17 to 2,726 properties in 2017/18, following an initial increase at the start of the period from 2,506 properties affected in 2015/16. Our current performance is better than our PC of 2,931, and we are forecasting to continue to surpass our PC across the final two years of the 2015-20 period.

## 9.2 How we are performing in 2015-18 and forecasts for 2018-20

continued

### Properties subject to repeat flooding (which includes severe weather)

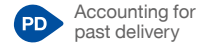
Repeat sewer flooding measures the number of times during the year that properties have experienced sewer flooding where the property or its garden has flooded before in the last ten years. We have continued to reduce the number of properties subject to repeat flooding from the original public network throughout the 2015-20 period, from 82 in 2015/16 and 46 in 2016/17 to 38 in 2017/18. This performance, representing a 54% reduction on 2015/16 levels, has generated a forecast ODI reward of £3.8m. We are forecasting to maintain performance at similar levels for the remaining two years of the 2015-20 period. These figures relate to annual performance. Repeat sewer flooding is one of our asset health measures and compliance with our PC of 496 is assessed on three-year average performance, giving a performance of 55 in 2017/18.

### Sewer collapses

The number of sewer collapses is a key measure of the asset health of our sewerage network. Following an increase in the number of collapses on the original public sewer network from 38 in 2015/16 to 55 in 2016/17, we have seen a subsequent improvement in our performance to 46 in 2017/18. For the final two years of the 2015-20 period, we are forecasting to achieve or beat our PC. The figures above relate to annual performance. Sewer collapses on the public network is one of our asset health measures and compliance with our PC of 58 is assessed on three-year average performance, giving a result of 46 for 2017/18.

A similar profile occurred with regards to sewer collapses on the transferred network, with an increase in the number of collapses recorded between 2015/16 and 2016/17, with 58 and 72 collapses recorded respectively, followed by a decrease in the number of collapses recorded in 2017/18, with a total of 51 collapses. This is significantly below our PC of 84. For the final two years of the 2015-20 period, we are forecasting to achieve or beat our PC.

### Ofwat IAP test areas



# 54%

we have reduced the number of properties subject to repeat flooding by 54%



**Over the 2015-20 period, we have seen a reduction in the number of Category 3 pollution incidents, from 156 in 2015/16 a 35% reduction, to 58 in 2017/18 a further 43% reduction.**



**We are industry leading with the highest percentage of Good and Excellent bathing waters in England.**

For 2020-25, to improve transparency we are:

- Consolidating our internal sewer flooding measures into a single PC. Customers' primary concern is the fact they have flooded, not which of our assets was the cause;
- Similarly our external sewer flooding measures will be consolidated into a single PC, as will our sewer collapse measures; and
- We are retaining a repeat sewer flooding measure, but are adopting a simpler definition.

### We help to improve the quality of rivers and coastal waters for the benefit of people, the environment and wildlife.

#### Pollution

Over the 2015-20 period, we have seen a reduction in the number of Category 3 pollution incidents from 156 in 2015/16 to 102 in 2016/17, representing a 35% reduction, and to 58 in 2017/18, delivering a further 43% reduction. Category 3 pollution incidents is one of our asset health measures and compliance with our PC is assessed on three-year average performance. In 2017/18, this gives a performance of 105, which beats our PC.

Our transformative Pollution Management Programme has had a significant impact on Category 3 incidents over the past two years. We also continue to work with the EA to share good practice and gain a common understanding of processes, procedures and lessons learned. For the last two years of the 2015-20 period we aim to continue to achieve a Green assessment for Category 3 pollution incidents on the EA's performance assessment.

### Bathing water quality compliance

Our aim is to contribute to all of our region's bathing waters being 'Sufficient' or better. For the second year running, all 34 designated bathing waters in our region met the required standard of 'Sufficient' or better. This again meets our PC that all 34 bathing waters are 'Sufficient' or better by 2020. We are also industry leading with the highest percentage of 'Good' (seven bathing waters) and 'Excellent' (25 bathing waters) in England. We are one of just three companies with no bathing waters classified as 'Poor'. We anticipate that this performance will continue into 2018/19 and 2019/20, with all designated bathing waters in our region meeting the 'Sufficient' standard or better.

## 9.2 How we are performing in 2015-18 and forecasts for 2018-20

continued

### Sewage treatment works discharge compliance

Our performance against this measure has been excellent for a number of years, although this is becoming increasingly challenging as standards become even tighter. In the calendar year of 2016, we had one failure for STW discharge compliance, while in 2017 we recorded two failures. Our aim for the next two years (and beyond) is zero failures. These figures relate to annual performance. STW discharge compliance is one of our asset health measures and compliance with our PC of zero is assessed on three-year average performance, giving a 2017/18 result of 1.33.

Our aim is zero failures. This will be challenging, but is important in meeting our outcome of helping to improve the quality of rivers and coastal waters for the benefit of people, the environment and wildlife and to meet our objective to be a 4\* company in the EA's EPA.

As a result of continually tightening consent standards, we are making a significant investment in our STW to reduce the amount of phosphorus being discharged. We will also continue our contribution to improving river water quality in the North East.

#### Ofwat IAP test areas



Accounting for past delivery

We strive to make sure that our customers' money is spent on well justified schemes that will deliver real improvements to water quality and ecology. We also plan to meet future consent standards by continually evolving our processes and continuing to work in partnership to attain the necessary sustainable improvements in river water quality, supporting a catchment-based approach to managing the water environment.

**We are resilient and provide clean drinking water and effective sewerage services; now, and for future generations.**

#### Greenhouse gas emissions

Following increases in greenhouse gas emissions over the previous two years due to challenging weather conditions, we saw our emissions fall in 2016/17 to 187.7kTonnes and to 163.5kTonnes in 2017/18. This reduction was largely attributable to a change to cleaner energy sources and also the use of our gas to grid facilities and is a performance that surpasses our PC of 172kTonnes. We anticipate that our performance in this measure will improve to exceed our PC further across the final two years of the 2015-20 period.

## 9.3 Scheme specific performance commitments

In the 2015-20 period we had two scheme specific PCs. The first was to deliver a long sea outfall at Whitburn, which was delivered on time. The second was to implement a new CC&B system. In order to ensure a smooth transition to the new system for customers, we took the decision to slightly postpone implementation beyond the end of March 2018. This has resulted in a ODI penalty of £0.1m. The Water Forums were very supportive of this approach.

## 9.4 Performance on major incidents

Over the AMP6 period, we have experienced some incidents that are classed as 'major' according to the parameters included in the published methodology for PR19. These incidents related to our wastewater services and were incidents categorised as Category 1 by the EA. Our response to these incidents followed our defined emergency planning processes, which ensure that we address the issue swiftly and protect our customers and the environment. We have a series of prescribed responses for emergency situations covering a range of potential scenarios and include liaison with our stakeholders and customers, as appropriate, to manage our relationships effectively. We have worked closely with the EA on this area of service, and have delivered a pollution management programme designed to minimise the risk of such events occurring. This has been successful, with no Category 1 or 2 pollution incidents in the last 12 calendar months.

## 9.5 Ensuring transparency

Each year, we consult with our customers and stakeholders on our Draft Assurance Plan – this details the arrangements we have in place to firstly, ensure that we meet our PCs and secondly, to ensure that we report on progress in an accurate and transparent way. This plan sets out the risk associated with meeting our PCs (performance risks) as well as those associated with providing data of appropriate quality (reporting risks) along with our proposed mitigations.

Consultees are specifically asked if there are any gaps, whether our Assurance Plan adequately addresses the risks identified and, finally, if we should provide any further information to enhance trust and confidence. The response is reflected in our Final Assurance Plan and APR.

To maximise transparency, we publish two versions of both our Final Assurance Plan and APR, a fully detailed version for stakeholders and a simpler, more accessible version for customers.

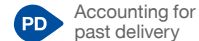
In addition to publishing our APR, we continue to be a strong supporter of the Discover Water website, where details of our performance and how this compares with the rest of the industry are shared. We enhance this transparency further by publishing additional comparative performance information on our website.

We continue to conduct an extensive customer engagement programme within which, where appropriate, we share details of our actual and comparative performance.

Before publishing our APR, in July each year we conduct a thorough performance review with the Water Forums, following which we conduct ‘deep dives’ into any areas of challenge.

We will continue to enhance and evolve our approach during the 2020-25 period.

### Ofwat IAP test areas



## 9.6 Reconciliation of 2015-20 performance

This section describes various aspects of our operational and financial performance which will be reconciled in order to calculate adjustments to 2020-25 price controls.

In July 2018, we submitted the Wholesale Revenue Forecasting Incentive Mechanism (WRFIM), Totex Menu, Household Retail PR14, RCV and Revenue adjustment models.

For all PR14 models, we have fully complied with the PR14 rulebook. All projections for 2018/19 and 2019/20 are based on business plan forecasts.

These reconciliation models cover:

	Feeder models in July	Business Plan Tables	Application to revenue controls
ODIs		App8, App27	Network Plus
Wholesale totex sharing	Totex model RCV & Revenue Feeder	App8, WS15, WWS15	Network Plus
Wholesale revenue forecasting incentive mechanism	WRFIM model RCV and Revenue Feeder	WS13, WWS13	Network Plus
Water trading incentive	Water Trading model RCV and Revenue Feeder	WS17	100% Water Resources
Household retail	HH Retail model	R9	Household retail
2010-15 reconciliation	Pre-populated	Multiple	Network Plus
Land disposals	–	App8, App9	Automatic
SIM	–	R10	Household retail

## 9.6 Reconciliation of 2015-20 performance

continued

### ODIs in 2015-20

Based on our actual and forecast performance in 2015-20, we are expecting to accrue net ODI rewards for the period in the region of £19m.

The forecast rewards are primarily due to strong outperformance on interruptions to supply and sewer flooding, offset by a small penalty for underperformance on leakage and for a minor delay in implementing our new CC&B system.

These penalties and rewards were based on customer engagement undertaken at PR14, and a full breakdown is provided in our APR, at Table 3A.

We also share with customers, in our acceptability research, the impact of our 2015-20 ODIs on the future bill for 2020-25.

### Wholesale totex expenditure sharing

We submitted our wholesale totex expenditure sharing model in July 2018, as per the Ofwat guidance. The model inputs reconcile to the pre-populated data that was supplied by Ofwat, the 2017/18 APR and our totex forecasts for 2018/19 and 2019/20.

We have followed the PR14 rulebook guidance throughout.

#### Ofwat IAP test areas



Accounting for past delivery

The model indicates substantial outperformance for wastewater, with correspondingly large RCV and revenue downward adjustments that feed into table WWS15. There is a small upwards adjustment for the water service.

**248** See Section 7.8 for explanations and quantification of the 2015-20 totex efficiencies

### Wholesale revenue forecasting incentive mechanism (WRFIM)

Our WRFIM model forecasts a revenue adjustment of -£11m for 2015-20, relating to higher actual revenue in 2014/15 which was not adjusted in the current price review period.

### Water trading incentive

We are making an application for a £7.1m incentive payment for a qualifying water trade. This relates to a major 20Ml/d export trade of water resources to Thames Water. There is a full report on the trade included as a commentary to table WS17, but the key points are:

- We have published an approved trading and procurement code;

**A** See Appendix 1.2

- The NWL/Thames Water agreement was signed on September 2014. The revenues used in the incentive claim start from 1 April 2015 and the full contract is for 20 years;
- NWL and Thames Water are unrelated parties;
- There is clear customer benefit, with a 50:50 share of net gains. We have carried out customer research that supports a 50:50 sharing rate for such trades; and
- There are no incidence effects. The incentive would be included in the Water Resource revenue control in 2020/21. This is the same year as our significant bill reduction, which offsets this incentive entirely. No customer will see a net bill increase due to this incentive.

### Background

We completed raising our Essex WRZ Abberton reservoir in 2014. The raising increased the dry year availability of water to the Essex WRZ by 64Ml/d. This increase in deployable output satisfied the supply deficit that existed and gave a significant surplus above the dry year demand plus target headroom. This is to be expected in large-scale water resource schemes as the economics of construction favour creation of a future headroom in the supply demand balance. As future demand increases, this headroom is gradually used.

The WRMP forecasts for PR14 showed that the Essex WRZ would have a significant surplus through the 25-year planning horizon and that we could support supplying Thames Water with 20Ml/d of raw water for 20 years. In practice the supply would be achieved by reducing the Chigwell raw water we take from Thames Water by 20Ml/d. Thames Water only required the supply when their supplies were becoming stretched therefore a trading agreement was negotiated with them that required an annual reservation charge (whether water was taken or not) plus a volumetric charge when the water was needed. An additional 5Ml/d was added to the agreement from 1 March 2017 until 31 March 2018.

### Benefits to customers

Essex and Suffolk customers have benefited from the Thames Water trade through lower bills since 2015. Our PR14 business plan and Ofwat's FD included a projection of £1.6m pa of income from the trade. This additional income was used to reduce our Essex and Suffolk customers' bills by £1 per year across 2015-20.

For PR19, we are including the projected £1.3m pa income from the water trade in Table Wr3, line 12, within the price control. This means that the required income from water resources tariffs for customers is reduced by this amount. In this way, customers will benefit from lower bills throughout the length of the trade.

## 9.6 Reconciliation of 2015-20 performance continued

Ofwat's Water Trading Model is designed to provide an incentive for water companies to create such trades and to share their benefits 50:50 with customers.

The trade to 2035 has overall NPV of £20.5m. The company's 50% incentive share is £10.2m. The model splits this incentive between £7.1m for PR19 and £3.2m for PR24. In the table below, there is a small net cost to customers in 2020-25. This represents a 0.7% increase in bills. This is more than offset by the large bill reductions in 2020/21 due to the lower cost of capital and totex efficiency savings, so there is no incidence effect for water bills generally or for the water resources charge specifically.

We believe that the small increase only in 2020-25 is acceptable, given the larger gains already given entirely to customers over 2015-20, and that will follow from 2025.

### Sharing the gains from trading

Change to 2017/18 prices, NPV 2017/18	2015-20	2020-25	2025-30	2030-35	Whole Scheme
Gain for customers	7.1	-1.8	1.3	3.7	10.2
NWL incentive	0.0	7.1	3.2	0.0	10.2
Trade value	7.1	5.3	4.4	3.7	20.5

### Household retail

In our household retail model submitted in July, we forecast a £0.2m revenue adjustment from the model.

### 2010-15 reconciliation

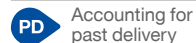
Ofwat has provided the 2010-15 reconciliation inputs to the business plan tables. We have checked, queried and now agree with the revised inputs provided.

### Land disposals

We have completed Table App9 for land disposals as per our APR for 2015/16 to 2017/18 and our latest forecasts for 2018/19 and 2019/20.

The resulting RCV adjustments have been fed into the RCV adjustment model and then into Table App8. The RCV adjustments are, therefore, made automatically to the appropriate controls. All data taken from Table App25, £m.

#### Ofwat IAP test areas



## 9.7 Summary of PR14 revenue and RCV adjustments

All data in 2017/18 CPIH deflated prices, totals for 2020-25 (£m)

### PR14 reconciliation tables summary

Revenue adjustments	Water	Wastewater	Retail	Total
Further 2010-15 adjustments	3.6	3.0		6.6
ODIs			(0.1)	(0.1)
Wholesale totex	10.2	(5.2)		5.0
Revenue WRFIM	(7.8)	(3.2)		(11.0)
Household retail revenue			(0.2)	(0.2)
Water trading	7.1			7.1
SIM			8.3	8.3
<b>Total</b>	<b>13.1</b>	<b>(5.4)</b>	<b>8.0</b>	<b>15.7</b>

RCV adjustments	Water	Wastewater	Total
Land disposals	(5)	1	(4)
2010-15 adjustments	(9)	2	(7)
CIS RCV inflation adjustment	(41)	(31)	(72)
ODIs	10	12	22
Wholesale totex	25	(135)	(110)
<b>Total</b>	<b>(20)</b>	<b>(151)</b>	<b>(171)</b>

### Impact on customer bills

We have assumed reconciliation adjustments are made to revenue in 2020/21, whilst we have spread incentives such as water trading and SIM over 2020-25.

The automatic revenue reconciliation adjustments are offset by the opening lower cost of capital, whilst incentives are spread in a way that minimises bill impacts.

# 10.0

**10.0** Governance and assurance

**10.1** Compliance with the UK CGC

**10.2** Risk management

**10.3** Our 'business as usual' assurance approach

**10.4** Our PR19 assurance approach

**10.5** Our PR19 assurance framework

**10.6** Assurance activity

**10.7** Assurance that the plan will deliver our commitments

**10.8** Having a good record of producing data

**10.9** Assurance of the business plan tables

**10.10** Innovation Panel

**10.11** Board Assurance Statement

# GOVERNANCE AND ASSURANCE

Our governance and assurance arrangements cover all areas of our business including operations, planning and regulatory reporting. These are overseen by our Board and its Committees and Sub-committees. In this section, we demonstrate that we have robust governance and assurance arrangements in place to provide trust and confidence for our customers.

We explain how we regard to the requirements of the UK CGC, describe our approach to risk management, and present our approach to assurance for our 'business as usual' activities and for the development of our business plan, where we have added further layers of governance and independent assurance.

## 10.0 Governance and assurance

### Our approach to governance and assurance

Every member of our Board has endorsed our business plan. Board members have been able to do this with confidence because:

- The Board has led the development of our strategy, customer and stakeholder engagement arrangements and assurance processes, and has extensively reviewed and challenged the business plan;
- We have fully effective 'business as usual' assurance arrangements in place; and
- Our comprehensive PR19 independent assurance has raised no material issues with our plan.

**A** See Appendix 1.2

We continue to publish an Assurance Plan which sets out an assessment of any risks, strengths and weaknesses associated with either meeting our obligations and commitments or providing information of appropriate quality. It details the assurance we put in place to address these risks and provides customers with information so that we can be held to account.

#### Ofwat IAP test areas

**CA** Securing confidence and assurance



**The Board has led the development of our strategy, customer and stakeholder arrangements and assurance process.**

## 10.1 Compliance with the UK CGC

The Board has close regard to the UK CGC as required by the company's Instrument of Appointment (the Licence).

The main focus of the UK CGC is the relationship between a company and its shareholders. Listed companies generally have a higher number of shareholders, some of whom may not be fully familiar with the risks facing those companies and the approaches taken by management to those risks. The UK CGC provides valuable protection to shareholders in such companies. NWL, by contrast, is a private company with a single ultimate controlling shareholder. As such, it is in a very different position from the companies for which the UK CGC was designed. NWL seeks to comply with both the principles and spirit of the UK CGC in this context.

The company also has in place a further governance code (the NWL Code) (**A** See Appendix 1.2), developed in discussion with Ofwat in response to its Board leadership transparency principles (the Ofwat principles). The NWL Code states NWL's intention that the Board will comprise four INEDs (rather than the three required by the Licence), four shareholder-appointed Non-Executive Directors (NEDs), the Chairman and three Executive Directors.

As a private company with a single ultimate controlling shareholder, we believe it to be consistent with good corporate governance for there to be significant shareholder representation on the Board. However, the shareholder appointed NEDs (excluding the Chairman) are not a majority on the Board and are no greater than the number of INEDs, which ensures that the INEDs have a very strong voice. Moreover, our four INEDs are experienced, capable and independent-minded people who bring a diverse range of talents to the Board, as well as a determination to champion customers' interests and maintain first class governance.



## 10.1 Compliance with the UK CGC

### continued

The way in which we meet the Ofwat principles is set out in our Annual Report and Financial Statements alongside our Chairman's introduction. It also contains confirmation in Paul Rew's Senior INED report that the INEDs are fully involved in all of the main aspects of NWL's governance and, throughout the year, participate in the Board meetings of NWL's holding company, Northumbrian Water Group Limited (NWGL).

In the concluding paragraph of his report, Paul Rew confirms "that the INEDs are all satisfied that the balance of experience and expertise on the Board of the company, its Committees, Sub-committees and the PR19 Board Sub-group ensures that robust compliance and good governance are achieved and that the interests of all the company's shareholders, and especially customers, are protected."

The effectiveness of our Board was recently assessed independently by Giovanna Michelon (Professor of Accounting at the University of Exeter Business School) who is a well-established academic in the field of corporate governance and social and environmental accounting and reporting. The main aim of this evaluation was to assess the Board's effectiveness in working for the long-term success of NWL and fulfilling its key roles of setting strategic direction, monitoring management performance and providing support and advice.

Professor Michelon delivered very positive feedback, concluding that the Board is working well, with particular reference to the positive, constructive tone of its discussions and the quality of the work done at Committee level.

#### Ofwat IAP test areas

**CA** Securing confidence and assurance

## 10.2 Risk management

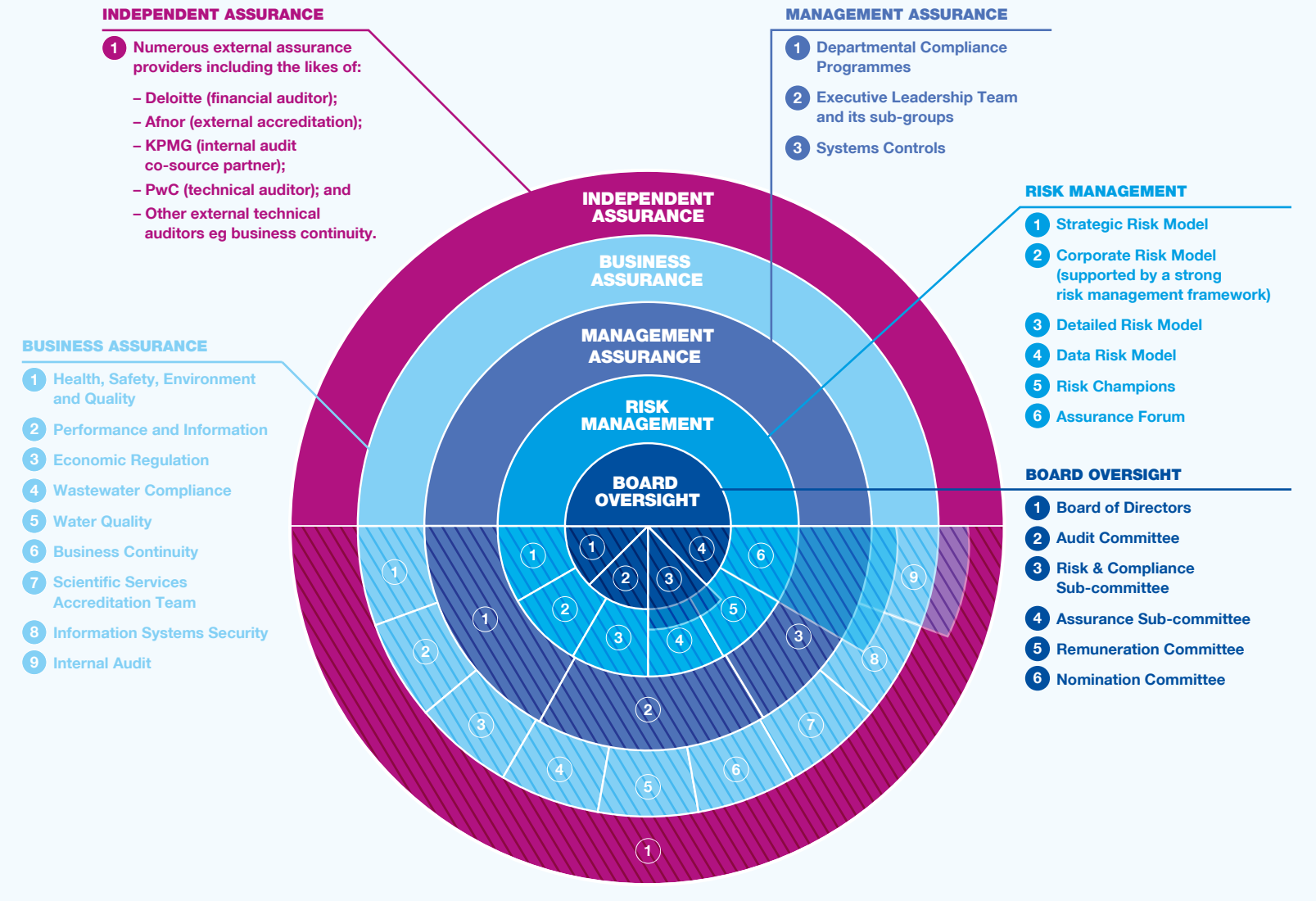
The Board, supported by the Risk & Compliance Sub-committee, has ultimate responsibility for risk management and for determining risk appetite. The Risk & Compliance Sub-committee receives regular updates on top-rated risks and priorities for assurance and conducts 'deep-dives' into key areas of risk. On the Board's behalf the Risk & Compliance Sub-committee has conducted a robust assessment of the principal risks facing the company. These risks, and how they are managed, are described in our Annual Report and Financial Statements.

Risks have also been robustly stress-tested in our viability statement assessment which, in turn, has fully considered all detailed guidance from Ofwat.

## 10.3 Our 'business as usual' assurance approach

Our 'business as usual' assurance approach is visually represented on our Assurance Framework (Figure 10). This approach illustrates how our governance and assurance arrangements are used to ensure that information we provide can be trusted. We outline our 'business as usual' approach with further detail included in our annual Assurance Plan, which is developed with input and feedback from our customers. We were delighted to receive almost 4,000 responses from our customers to the draft of our current Assurance Plan, with 86% of respondents stating that the document gave them confidence and trust in our business.

**FIGURE 10: OUR 'BUSINESS AS USUAL' ASSURANCE FRAMEWORK**



## 10.3 Our ‘business as usual’ assurance approach

continued

### Board responsibilities and processes

The Board sets, implements and supports the company’s vision, values, standards and strategy and ensures compliance with company policies and legal and regulatory obligations. Within the NWGL framework, NWL operates as a stand-alone company. The Board functions as an integrated unit and each director understands their responsibility to act in the interests of the company.

The company’s Licence requires it to have regard to the UK CGC and the Board embraces the key elements of the UK CGC’s principles in the context of a privately owned company. The company explains any significant areas of non-compliance with the UK CGC in its Annual Report and Financial Statements.

A critical role is carried out by the INEDs. The company has four INEDs: Paul Rew, Dr Simon Lyster, Margaret Fay and Martin Nègre. As well as participating in formal meetings, the INEDs have very broad involvement in the work of the company.

The INEDs have exercised oversight in management sessions affecting water and wastewater operations and customer service. They also have regular direct engagement with customers and stakeholders through events and participation with the Water Forums and other channels.

The Board considers that an appropriate balance is achieved between the interests of shareholders, customers and other stakeholders. All directors’ views are given full consideration and due weight in all proceedings of the Board and its Committees and Sub-committees.

During 2017/18, the company arranged a formal externally-facilitated review of the Board’s performance. This was conducted by Professor Giovanna Michelin, a professor of accounting, who has particular expertise in corporate governance and has no prior connection to the company. The evaluation process involved directors completing a tailored questionnaire and submitting it directly to Professor Michelin, who interviewed several directors before submitting her initial findings ahead of the Board meeting on 17 April 2018, followed by a written report. The findings were generally very positive. Professor Michelin concluded that the Board is working in a solid way, exhibiting a high level of trust and a positive environment where everyone feels comfortable giving their opinions and contributing to the debate. The Chairman’s leadership style was described as “empowering” and the risk management process led by the Board was felt to be very detailed and thorough. The Board will give further thought to Professor Michelin’s suggestions relating to:

#### Ofwat IAP test areas

**CA** Securing confidence and assurance

- Refining the Board’s approach to prioritising the business at meetings;
- Succession planning; and
- Creating further opportunities for direct engagement between stakeholders and the Board.

More detailed information about our Board Committees and Sub-committees is set out in our APR and Annual Report.

### Audit Committee

The purpose of the Audit Committee is to assist Executive Directors, NEDs and INEDs of NWL to discharge their individual and collective duties and responsibilities in relation to:

- Ensuring that the financial and accounting systems of NWL provide accurate and up-to-date information on its current position;
- Ensuring that NWL’s published financial statements represent a true and fair reflection of this position;
- Ensuring the integrity of NWL’s regulatory reporting systems and the accuracy of its regulatory reports; and
- Assessing the integrity of NWL’s internal financial controls.

## 10.3 Our ‘business as usual’ assurance approach

### continued

The Audit Committee comprises at least three members (to include at least two INEDs) and at least one shareholder-appointed NED. Paul Rew chairs the Audit Committee and has recent and relevant financial experience.

The Audit Committee is assisted in its duties by the Assurance Sub-committee and the Risk & Compliance Sub-committee, both of which Paul Rew also chairs.

#### Risk & Compliance Sub-committee

The purpose of the Risk & Compliance Sub-committee is to assist the Audit Committee to discharge its responsibilities to the Board in relation to assessing the scope and effectiveness of NWL’s risk management systems and the integrity of its internal financial controls. The Risk & Compliance Sub-committee comprises at least two INEDs with at least one having recent and relevant financial experience. The Risk & Compliance Sub-committee oversees and makes recommendations on:

- Sponsoring the risk management process;
- Setting the tone and influencing the culture of risk management including on whether the Group is risk taking or risk averse as a whole or on any individual issue, and on what types of risk are acceptable. It also sets the standards and expectations of staff with respect to conduct and probity;
- Determining the appropriate risk appetite;
- Determining the risk prioritisation protocol;
- Approving major decisions affecting risk profile and exposure;
- Monitoring the management of significant risks; and
- Satisfying itself that the less significant risks are being actively managed with appropriate controls in place and are working.

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#### Remuneration Committee

The Remuneration Committee is chaired by the company’s Chairman, Andrew Hunter. The other members are Paul Rew, Dr Simon Lyster and Margaret Fay (all INEDs) and Duncan Macrae, a shareholder-appointed NED.

The work of the Remuneration Committee includes the adoption of principles and standards in relation to executive remuneration and benefits and agreeing individual’s remuneration packages. The company complies with its obligations under Section 35A of the Water Act 2003 by disclosing in its regulatory accounts a detailed breakdown of remuneration paid to the Executive Directors of NWL including those elements linked to NWL’s performance.

#### NWGL

Although the INEDs are not members of the Board of NWL’s holding company, NWGL, they attend all NWGL’s Board meetings and participate fully in discussions, encouraging a cohesive approach between both Boards. They do not participate in business relating to the non-household retail market.

#### Terms of reference

Full terms of reference for the NWL Board and its Committees and Sub-committees are available.

**A** See Appendix 1.2

#### Governance Report

A full Governance Report is published in our Annual Report and Financial Statements. This includes the Chairman’s introduction, Senior INED’s report, Corporate governance report and reports from the Board’s Committees and Sub-committees.

## 10.3 Our ‘business as usual’ assurance approach

continued

### Management assurance

With regard to management assurance, our ELT implements the Board’s strategies and closely monitors performance. This includes making sure sufficient and suitable resources are applied to scrutinise performance and identify and manage risk. It also ensures there is appropriate assignment of responsibilities, corporate structures and reporting lines and accountabilities, supported by annual positive assurance on systems and controls.

We operate an integrated management system that provides co-ordinated management of our quality systems. We have company-wide accreditation to the following standards:

ISO 9001:  
Quality management

ISO 14001:  
Environmental management

ISO 18001:  
Health and safety management

ISO 55001:  
Asset Management

ISO 17025:  
General requirements for the competence of testing and calibration laboratories

### Business assurance

Our business assurance processes include many teams that are separate from our operational activities which monitor, capture and manage the data we report, for example, Information Systems Security, and Health, Safety, Environment and Quality. Specifically, this includes our Internal Audit team. Accountable directly to the Audit Committee, our Internal Audit team provides strong, independent assurance.


### Independent assurance

Our business assurance teams are supplemented with external specialist providers where we require technical and/or external assurance. These providers include Deloitte (financial auditor), PwC (technical auditor), AFNOR (external accreditation), KPMG (internal audit co-source partner) and PA Consulting (programme assurance).

### The Company Monitoring Framework (CMF)

We are reviewing the latest CMF assessment shared in January 2019, and will use the feedback to further strengthen our approach.

Ofwat IAP test areas

 Securing confidence and assurance

## 10.4 Our PR19 assurance approach

The governance and assurance described in the preceding section is in operation on a continuing basis for all company activities, including price reviews. In addition to this, we have put additional management and assurance in place for PR19, which we describe in this section.

Within the Annual Assurance Plan ([A](#) See Appendix 1.2), PR19 is highlighted as a risk that requires priority assurance which is defined as “a high level of assurance required to make sure all checks and balances are in place and working effectively”.

Our planned activities include assurance that builds on our ‘business as usual’ governance and includes formal quality assurance in line with ISO 9001: Quality management, as well as additional independent assurance which takes into account risk and materiality and ensures full and appropriate coverage of all areas of the plan.

## 10.5 Our PR19 assurance framework

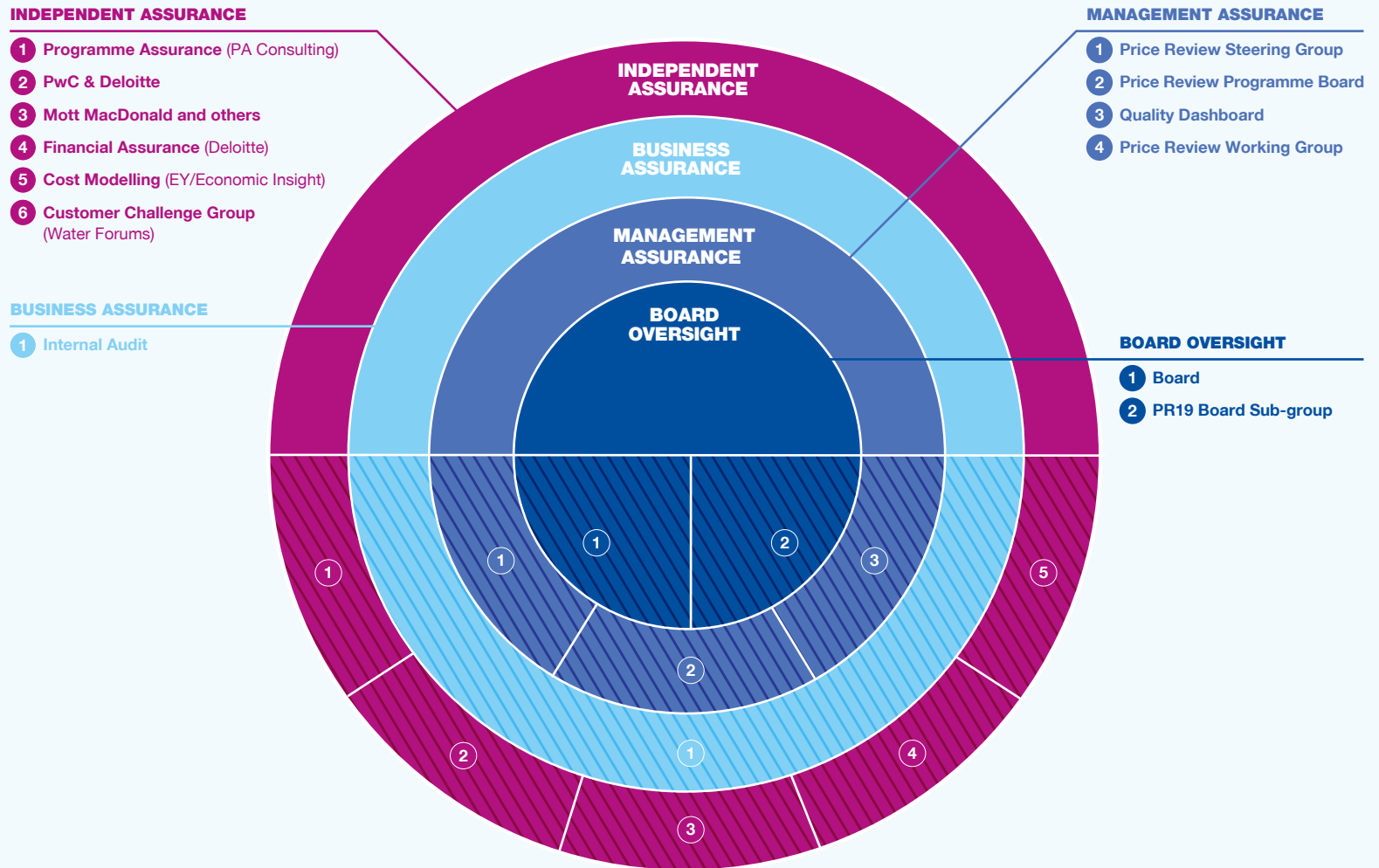
The assurance framework for the development of our plan has built on our well-developed and embedded 'business as usual' assurance framework. It is overseen by the Board and its Committees and Sub-committees supported by three lines of assurance:

- Management;
- Business; and
- Independent assurance.

We discuss each level of assurance on the following pages.

**FIGURE 11: PR19 ASSURANCE FRAMEWORK**

Our approach is set out in our PR19 assurance framework. The figure below illustrates the tiers of assurance applied to PR19.



## 10.5 Our PR19 assurance framework

### continued

#### Board oversight

The Board has set the business plan strategy and has retained full oversight over the course of the development of the plan. This has included Board leadership, ownership of the arrangements for governance and assurance, providing strategic direction and reviewing progress against the project plan.

Given the critical importance of PR19, the Board has formed a dedicated PR19 Board Sub-group to provide integrated support to both the Board and management in driving forward and assuring preparation of our PR19 plan.

All INEDs sit on the PR19 Board Sub-group, as do NWL's three Executive Directors and two shareholder appointed NEDs. The Sub-group met 11 times during 2017/18 in the lead up to the submission of the business plan.

The PR19 Board Sub-group has discussed detailed reports from the company's PR19 team, covering each aspect of the preparation of the business plan. This has included:

- Affordability and inclusivity;
- The drive for upper quartile efficiency;
- The WINEP;
- The NW and ESW WRMPs;
- The enhancement programme and resilience;
- Customer engagement and participation;
- Establishing MoS, PCs and ODIs;
- The plan's progress against programme milestones; and
- Assurance of the plan.

The PR19 Board Sub-group has worked closely with the company's Executive leadership team and relevant senior managers, as well as with external assurance providers. In addition, INEDs regularly attend meetings of NWL's Water Forums and customer participation workshops, to ensure they have first-hand understanding of customers' needs, priorities and concerns.

Since its formation, regular updates and detailed outlines have been provided by the PR19 Board Sub-group to the full Board in relation to the progress of the preparation of our plan. Minutes of all meetings of the PR19 Board Sub-group are circulated to the Board in advance of main Board meetings. All Directors have reviewed and commented on the key drafts of our plan in the lead-up to its submission.

At the main 'staging posts' along the route to submission the Board has approved the overall shape of the plan and the elements of prime interest to customers, including prices, affordability and our approach to ensuring the resilience of our services. This has dovetailed with our close cooperation with the Water Forums, whose Chair and Vice-chair have attended two Board meetings (in October 2017 and in July 2018) to give the Board first-hand feedback on the overall structure of the plan, the quality of the company's consultation with customers and the quality of our response to customers' priorities.

#### Management assurance

The Price Review Steering Group (PRSG) has overseen implementation of the Board's strategies and monitors performance. It has provided strategic direction to the PR19 programme team and resolved escalations from the Programme Board.

The PRSG is chaired by our Assets and Assurance Director. Its members are our other two Executive Directors (the CEO and Finance Director) and our ELT which represents all areas of our licenced business. The Programme Board chair, the Head of Strategic Planning and Economic Regulation, also sits on the PRSG.

#### Ofwat IAP test areas

**CA** Securing confidence and assurance

The Programme Board (PRPB) has overseen the day-to-day implementation of the programme, has monitored progress and resolved escalations from the programme team.

The programme team, represented by the Price Review Working Group (PRWG), is led by the PR19 Programme Manager with workstreams based around the five main business plan areas: water, wastewater, customer, engagement and regulatory modelling. The PRWG coordinates programme activities by managing interactions across the workstreams, monitoring progress and taking corrective action where appropriate.

Assurance is supported through the management of a quality assurance dashboard. The dashboard represents the first line of assurance in our programme assurance approach and is informed by a series of detailed questions in line with tests set by Ofwat. It is used to monitor progress and the quality of the business plan as it is developed. Data and information supporting the dashboard have been subject to internal and external assurance reviews in line with the quality plan.

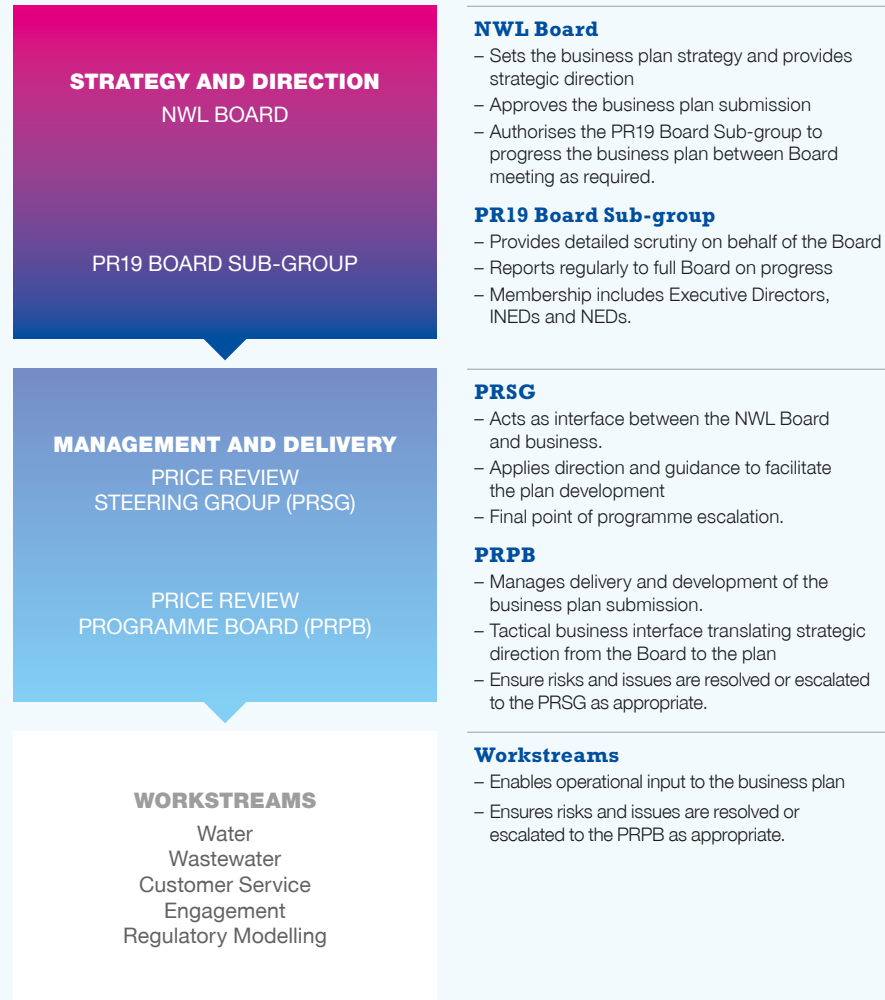


**The Board has set the business plan strategy and has retained full oversight of the plan.**

## 10.5 Our PR19 assurance framework

continued

**FIGURE 12: PR19 GOVERNANCE STRUCTURE**



### Ofwat IAP test areas

**CA** Securing confidence and assurance

Our PR19 programme governance structure is summarised in Figure 12.

### Business assurance

Our Internal Audit team is independent from the programme team and is accountable to the PR19 Board Sub-group, providing strong, independent assurance. It provided programme assurance by undertaking interim reviews throughout the delivery of the programme. It also oversaw the data assurance process using our data risk assessment methodology to determine levels of risk and target assurance activity.

A risk matrix based on complexity and consequence informed decisions about whether our Internal Audit team or an external assurance provider should undertake the reviews.

### Independent assurance

We have added external specialist providers to our business assurance team where we require technical and external assurance.

### Programme assurance

PA Consulting was appointed to provide a programme assurance role during the programme to assure the robustness of the process and development of the plan.

This involved assuring the programme structure, governance arrangements, plan, resourcing and programme support. This assurance sought to confirm that processes were well defined and documented, clearly understood, fully implemented and in line with the overall plan.

The assurance exercise assessed whether the scores provided in the quality assurance dashboard, used to assure development of the plan, were reasonable and justified. This assurance took the form of 'deep dives' into specific areas of the quality assurance dashboard, focusing on resilience, customer service and affordability.

### Independent Strategic Oversight

We appointed KPMG to provide independent strategic oversight. KPMG's role was to ensure we ask ourselves hard questions and to hold us to account in order that we submit the best possible business plan.



## 10.5 Our PR19 assurance framework

### continued

#### Data assurance

The Board is clear that the information we provide in our plan must be accurate, clear and transparent to provide confidence to our customers and stakeholders. This is both in respect of the information and customer research that we have used to inform our plan and the data tables we have submitted with our plan.

We have adopted a rigorous approach to data quality for all of the plan tables, which builds on our assurance approach for the data we submit each year in our APR. This assigns the following roles:

- Data Provider – responsible for producing the methodology for the data, including the source of the data and any calculations or assumptions required, and producing the data;
- Data Reviewer – responsible for reviewing the methodology and checking that the data has been produced in accordance with the methodology;
- Senior Manager – responsible for reviewing the data; and
- Independent Assurance Provider – responsible for checking that the data has been produced accurately and in accordance with the signed off methodology.

#### Ofwat IAP test areas



Securing confidence and assurance

We have engaged a number of independent data assurance providers, reflecting the nature of the data and our internal risk assessment. This has included Deloitte for financial data, PwC for non-financial data and our Internal Audit team. Each data assurance provider produced a final report to the Board setting out the findings of their assurance work, giving trust and confidence in the accuracy of the data we have submitted.

**A** See Appendix 10.1

#### Technical support

Aspects of our plan also require technical assurance and in particular, any enhancement schemes' business cases. Enhancement schemes are those that are required to provide enhanced levels of service including meeting new environmental standards, water quality requirements, growth or resilience work. We appointed Mott MacDonald as our technical partner to assess our enhancement pioneering methodology and the cost of our enhancement schemes.

Mott MacDonald carried out technical and cost assessments across our Resilience and WINEP programmes. The programmes were reviewed against six of the IAP tests that were defined in Ofwat's methodology:

- Engaging customers;
- Delivering outcomes for customers;
- Securing long-term resilience;
- Target controls, markets and innovation;
- Accounting for past delivery; and
- Securing confidence and assurance.

This resulted in a set of recommendations which we have used to strengthen our plan.

In the course of developing the plan, we have used a number of advisors whose expertise also provides a source of assurance. Described in more detail in the relevant sections of the plan, these advisors are summarised below.

Ernst & Young (EY) has advised on all aspects of wholesale cost assessment, including analysis of the Ofwat cost models. Economic Insight has provided similar advice on retail household. Economic Insight has also advised on RCV allocations (bioresources and water resources) and real price effects for both wholesale and retail.

Frontier Economics was appointed to deliver an innovative approach to our PR19 customer valuation research. The challenge was to design research that provided customers with real choices, from a tool that was easy to use and to provide the genuine insight we needed for our regulatory plan. Frontier Economics assisted in designing the tool we used with customers, drawing on their knowledge of behavioural economics and the industry, and Ofwat's PR19 methodology.

Subsequent to this research, we appointed Frontier Economics to provide us with guidance and assistance in the triangulation (bringing together all of the sources of information) in order to set PCs and ODIs. They advised us on the setting of our ODI package across our range of MoS. They also helped us to derive our rates of reward and penalty by acting in a critical friend role to ensure we use best practice.

## 10.5 Our PR19 assurance framework

### continued

#### The Water Forums

The Water Forums represent the interests of a wide range of stakeholders of our business. These are responsible for providing independent challenge and assurance to Ofwat on:

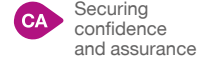
- The quality of our customer engagement; and
- The degree to which the results of this engagement are driving decision making and are reflected in our plan.

The Water Forums are led by an independent Chair, Jim Dixon, and comprise statutory members, such as the EA and CCWater, and other relevant stakeholders such as the National Farmers Union, Citizens Advice and the CBI.

The Water Forums have played an important role in helping to inform and challenge our plan. This has included assuring the quality of our research and engagement with customers and how well the results of this research have been incorporated into our plan. This has added particular value in the development of our Inclusivity Strategy and challenging the Board on engagement and performance targets. Water Forum members have attended meetings of the full NWL Board and PR19 Board Sub-group during the business planning process.

We have engaged with the Water Forums throughout the programme, sharing the outcome of our customer engagement activities and demonstrating how this has helped us shape our plan. Alongside formal Water Forum meetings, members have taken part in customer engagement activities and topic specific sub-group meetings and events. The challenge that we have received from the Water Forums and the impact this has had on our plan is documented more fully in Section 2.3 of this plan and in the Forums independent report to Ofwat.

#### Ofwat IAP test areas



**The Water Forums have played an important role in helping to inform and challenge our plan.**

## 10.6 Assurance activity

We have provided assurance reports at all meetings of the respective governance groups, including the PR19 Board Sub-group, PRSG and PRDB. This includes a review of the quality assurance dashboard at every meeting, plus technical reports as they arise. These assurance reports have identified where progress or the quality of material is on track and where focused and targeted action has been required.

In addition to providing independent programme assurance, PA Consulting has carried out a number of in-depth (deep dive) reviews. In October 2017, it reported on 'is resilient and stable in the long term', and in February 2018 'delivers the outcomes that customers want'. In March 2018, PA Consulting carried out a programme review to look at the evidence and effectiveness of our approach to overall governance, management, planning, resourcing and stakeholders. In May 2018, PA Consulting reported on 'at a price customers can afford'.

Our Internal Audit team has carried out audits to provide assurance that progress is in line with the plan and that previous actions have been satisfactorily addressed.

In February 2018, Mott MacDonald reported its assessment findings on our resilience and WINEP proposals after reviewing our programme against relevant IAP tests. As a result of this report, we reviewed the quality of our business cases and whether all our planned work needed to be completed by 2025. This resulted in much of our scheme to upgrade Howdon STW being rephased into 2025-30 and is evidence of ensuring our plan remains deliverable and affordable for customers. In other proposals we found that we could be more ambitious and this has led to more work to address lead in water supplies affecting young people.

Frontier Economics has provided advice and support in our approach to customer engagement and setting PCs.

## 10.7 Assurance that the plan will deliver our commitments

To achieve our vision to be the national leader in the provision of sustainable water and wastewater services we operate a 'business as usual' performance framework, which identifies the performance levels we need to achieve. These could be in the form of leadership performance targets, regulatory PCs, Licence obligations, statutory obligations and undertakings. Taking these into account we produce a company balanced scorecard. This is cascaded throughout the company, and business teams produce their own scorecards to support the achievement of the company scorecard.

At all levels in the business we monitor performance with respect to balanced scorecards. We implement management controls in the event of the need for better performance. This process has served us well to the extent that we believe that we are one of the higher performing companies in the sector.

This is an embedded business process that will continue to be applied during the period 2020-25. We are already identifying balanced scorecard targets to apply now to recognise and achieve higher performance levels in line with our plan to be upper quartile or show an improvement in every measure.

We have carried out a risk assessment to provide assurance that we can deliver our PR19 PCs and other commitments. This looks at each measure, and in the round, with respect to the degree of challenge, impact of failure and confidence that we have a good strategy to deliver. With such an ambitious plan, this does not mean that we can guarantee success in every measure every time. It provides assurance that we have an achievable plan and is providing insight into where we need to focus investment and management activity. Applying this risk-based approach has enabled the Board to endorse our plan.

### Ofwat IAP test areas

**CA** Securing confidence and assurance



**We have carried out a risk assessment to provide assurance that we can deliver our PR19 PCs and other commitments.**

## 10.8 Having a good record of producing data

We refer to the findings in Ofwat's 2017 CMF assessment.

**A** See Appendix 1.2

This found that our data assurance summary was well-written using a mix of narrative and diagrams. We published a succinct and comprehensive summary of the data assurance carried out throughout the year with an excellent outcome of assurance.

It was found that the data assurance summary took the reader through the company's assurance process and links to previous documents published. There was good coverage of all areas targeted in the assurance plan with a table clearly setting out all of the assurance activities performed for each targeted area and detail on the findings. The scope of the summary was much wider than the APR and covers other assurance activities related to the price review. The summary also recognised learnings and considered their impact for future assurance plans.

Ofwat gave us its highest assessment: exceeds expectations for our Assurance Plan.

**A** See Appendix 1.2

## 10.9 Assurance of the business plan tables

Our Assurance Plan 2018/19 addressed all assurance activity for 2018/19. With respect to PR19, we identified Periodic Review (PR19) – Overall Assurance Approach, as an area of risk. The assurance activity covered all data and information for 2018/19 and included:

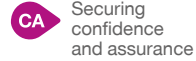
- Outcomes and PCs definitions;
- PR14 reconciliation information;
- Business plan tables submission;
- Cost assessment tables and annual performance reporting; and
- Business plan submission.

Deloitte has carried out an agreed upon procedures review of the key financial inputs to the business plan and financial model including the allocation of costs between business units and corporation tax inputs.

PwC and our Internal Audit team assured the accuracy and completeness of non-financial business plan data.

Our Internal Audit team has checked the consistency of the data tables with the business plan.

### Ofwat IAP test areas



**Our independent Innovation Panel concluded that we had a number of stand out innovations and an excellent set up for delivering innovations.**

## 10.10 Innovation Panel

We set up an independent panel to provide critical oversight of our approach to innovation. The Innovation Panel is chaired by Piers Clark, who is the founder and chairman of Isle Utilities, having previously been Commercial Director at Thames Water. In 2005, Piers established the Technology Approval Group, now a global innovation forum of the world's leading water utilities. The panel comprises senior individuals from companies and organisations that depend on innovation to survive with representatives from IBM, Oracle, Arsenal Football Club, Apple, Amazon, National Grid and C K Hutchison Holdings Limited (CKHH).

The panel concluded that it was confident that we had a number of stand-out innovations and excellent set-up for delivering innovations. It found that the mechanisms we use to identify and stimulate innovations was wide reaching and open minded, drawing ideas from employees, customers and the supply chain. It also found that our innovation approach is owned by top management and feels like part of the business's DNA.

It was felt that the most innovative ideas were about customers, for example eradicating water poverty and metering hot water because this is where water becomes expensive for customers.

We will continue to use our innovation panel in order to check we are as good as we think we are and to take action to ensure we have a culture of innovation.

## 10.11 Board Assurance statement

### Board Statement

The Board of NWL recognises that it is a privilege to be trusted to supply water and wastewater services to millions of people in the United Kingdom. The preparation of our business plan for 2020-25 provides a great opportunity to demonstrate that this trust is well founded and that NWL will have the resources, resilience, ambition and leadership to meet, and often exceed, customers' expectations over the coming years.

NWL's vision is to be the national leader in the provision of sustainable water and wastewater services. In order to achieve this, we need to work systematically towards the achievement of clear and stretching outcomes, which have been carefully set to optimise the quality of our services and to provide excellent value for our customers' money.

#### Ofwat IAP test areas

**CA** Securing confidence and assurance

**RR** Aligning risk and return

With this in mind, our plan for 2020-25 is underpinned by our PR19 assurance framework, which provides for several layers of internal and independent assurance, all overseen by the Board. The full Board set the strategy for the business plan collectively and has retained full oversight and ownership of its development and long term direction. The Board has been supported by the PR19 Board Sub-group, on which all four INEDs sit, as do the three Executive Directors and two shareholder-appointed NEDs, and which is chaired by Paul Rew, the Senior INED.

The PR19 Board Sub-group has met 14 times as at the date of this statement. It has at every stage offered real challenge to management to set aspirations for customer service as high as is sustainable and to seek out innovative solutions wherever possible. The INEDs have, therefore, been fully embedded in the production of the plan, working closely with the Executive Directors and the shareholder-appointed Non-Executive Directors.

Every member of the Board understands and supports the business plan and recognises that it has been fully and effectively assured in line with a sensible and practical assurance framework.

The full NWL Board is therefore very pleased to confirm that our plan:

- Is of high quality, accurate, clear, transparent and trustworthy;
- Will enable us to provide a resilient and sustainable water and wastewater service now and in the long term;
- Is affordable for all customers, in both the short and long term and sets out sensitive, practical and appropriate proposals to assist customers who are struggling, or at risk of struggling to pay their bills, as well as fostering inclusivity (this is addressed in more detail in the "Affordability and vulnerability" section below);
- Is stretching, ambitious and innovative but deliverable with excellent performance;
- Will enable us to meet all statutory and Licence obligations and will satisfy the expectations of the EA, NE, DWI and UK Government priorities; and
- Conforms to Ofwat's requirements in all material respects.

Below, we address certain key aspects of development of the plan, as set out by Ofwat.

### Business planning

We have ensured that the plan is of high quality through our involvement in setting the overall strategy and carefully guiding and monitoring the development of the plan. From this firm foundation we have tracked the development of the detailed proposals, checking that they are clearly drafted and reflect current industry best-practice, as well as customers' priorities and aspirations. We have tested this through extensive independent assurance and high quality direct engagement between Board members, our customers and the CCGs.

The Board understands that it is in no one's interests to produce an ambitious plan without ensuring that the company has the organisational and financial resources to deliver it. We have therefore paid very close attention to the balance struck in our proposals between customers' needs and wishes and the cost and practicality of delivery.

We have reviewed the company's approach to selecting schemes and projects and the company's capacity to deliver them sustainably in the light of recent performance. This has confirmed that the company's expenditure forecasts are robust and efficient and that all the proposals, including the enhancements and large investment proposals, are robust and deliverable and offer the best



**It is a privilege to be trusted to supply water and wastewater services to millions of people.**

## 10.11 Board Assurance statement

### continued

available outcome for customers. We are confident that the balance which has been achieved is sound and that NWL has the resources to deliver the commitments in the plan, as well as our statutory and Licence obligations (and to take account of UK Government policy statements).

Our confidence in NWL's capacity to deliver is underpinned by our high quality corporate governance processes, developed to demonstrate our understanding of Ofwat's trust and confidence agenda. We have simple and transparent corporate and financial structures, which promote a sustainable and trusting relationship with our customers. We will remain open about our structure, both during our customer engagement programme and formally in our annual reporting.

The EA, NE and the DWI have been consulted in the development of the plan and their expectations have been taken into account. When aligned with our customers' interests, we have implemented measures to meet, and sometimes exceed these expectations.

We have satisfied ourselves that the processes and governance which are in place have delivered high-quality data that our stakeholders can trust and which give our plan a strong evidence foundation. In assuring ourselves as to how we will deliver our plan, we have identified and assessed the principal risks and designed appropriate risk mitigation and management plans.

We confirm that our plan proposes an acceptable balance of risk and reward between customers, investors and stakeholders.

Innovation is a key theme at NWL and we have assured ourselves that our plan is innovative and ambitious. The company's second major Innovation Festival was held in July 2018, involving partners from across several sectors, as well as customers, to work with us to originate inventive and effective solutions for customers using new ways of thinking. The Board is satisfied that this commitment to innovation is embedded and reflected in our plan.

Although the PR19 process is complex, the Board has ensured that our customers' interests have been central both to the overall strategy and all the more granular decisions and choices. We are satisfied that our plan will provide first-class service to our customers across all aspects of water and wastewater service delivery both now and in the future.

### Financeability

We have assured ourselves that our plan is financeable on notional and actual capital structures and will protect the interests of customers in both the short and long term. This assessment of financeability is based on the following:

- We have a simple capital structure with no securitisation, and a conservative level of appointed gearing around the average for the sector;
- We have targeted a strong investment grade credit rating of BBB+/Baa1. Our key financial ratios for our plan include gearing and adjusted cash interest cover. Our ratio targets are derived from rating agency guidance; and
- We have carried out stress tests of our plan in line with Ofwat scenarios guidance. To the extent that any of the plausible scenarios, in isolation, or in the combinations we have tested, would place retention of the company's credit ratings at risk, the Directors are confident that this could be mitigated by delivering exceptional levels of service and performance for customers, at an efficient level of cost, and by applying our flexible dividend policy. Separate third party assurance agreed upon procedures have been performed on the calculations and stress testing of the plan in order to provide independent assurance to the Directors of the impact of the various scenarios.

### Ofwat IAP test areas

**CA** Securing confidence and assurance

**RR** Aligning risk and return



**We have assured ourselves that our plan is financeable on notional and actual structures and will protect the interests of customers in both the short and long term.**

### Customer engagement

We believe we have engaged with our customers in a particularly robust and effective way throughout the PR19 process, building on our experience from 2010-15. We calculate that approximately 400,000 customers had an opportunity to influence our plan.

We have taken our customer engagement vehicle "Flo", to many busy locations across our operational areas and customers have been very willing to talk to us. We have also run numerous 'Have your say' and co-creation sessions. Our INEDs have attended many of these meetings, to hear customers' views directly. The feedback from all these discussions has been carefully collated and fed into the process. We have also worked closely with the Water Forums (the CCGs) and benefited greatly from their constructive challenge. The Chair and Vice Chair of the Water Forums have attended main Board meetings and PR19 Board Sub-group meetings, where they have confirmed to Board members directly that our customer engagement has been of very good quality and that it has been effectively incorporated into our plan. We have assured ourselves that our understanding of our engagement is accurate, reliable and truly reflects the views of our customers.

## 10.11 Board Assurance statement

continued

### Resilience

The services we provide must be resilient. In order to plan for the future we have reviewed our performance in the recent past, as well as our governance and assurance systems. We have also engaged with customers to understand their views on the management of resilience and their approach to risk. Against that backdrop, we have conducted a thorough and systematic review of the operational, corporate and financial risks we face. This work has enabled us to assess the interventions available to us to manage resilience in customers' long-term interests, making use of a comprehensive resilience framework. This takes an integrated and systematic approach to understanding risk and resilience challenges across our business, encompassing operational, financial and corporate resilience, in alignment with Ofwat's resilience principles.

The Board confirms that its governance and assurance processes will deliver operational, financial and corporate resilience over the next control period and the long term.

The PR19 Board Sub-group has reviewed the resilience workstream and satisfied the Board that it is effective and appropriate.

### Affordability and vulnerability

NWL has an ambitious strategy to eradicate water poverty in all its operating areas, using Ofwat's definition of water poverty. The PR19 Board Sub-group conducted a detailed review of the multi-faceted strategy at its meeting on 8 March 2018, and it was formally launched on 22 May 2018. The support to be provided will see 300,000 customers lifted out of water poverty by 2025 and 400,000 by 2030, using a range of measures, including:

- Education on the benefits of metering and water efficiency;
- Working with partners to offer free financial advice classes;
- Supporting community groups as part of our employee volunteering programme; and
- Deploying our volunteers in local communities, to enhance customers' specific circumstances and build relationships.

NWL has also launched a new social tariff following extensive customer engagement, offering 50% discount to customers who most need support.

The Board has reviewed the work of the PR19 Board Sub-group and assured itself that the ambitious zero water poverty strategy is deliverable and sector leading.

#### Ofwat IAP test areas

**CA** Securing confidence and assurance

**RR** Aligning risk and return



**We have challenged and reviewed the outcomes, performance commitments and ODIs in our plan, and are confident they reflect the needs and preferences of our customers.**

### Outcomes

Our outcomes and performance commitments formalise the ambition of our plan. For us, this means stretching compared with industry standards and, where relevant, other industries. We have assured ourselves that our commitments do represent stretching levels, that they are deliverable and that we will be equipped to deliver them. In assessing this we have taken a robust approach to monitoring how we are performing throughout the 2015-20 period, including monthly reporting to the full Board on our PCs.

We have challenged and reviewed the outcomes, PCs and ODIs in our plan and are confident they reflect the needs and preferences of our customers.

We will be open about our progress against our outcomes, PCs and ODIs by reporting on them regularly and assuring that our reports can be trusted by our customers and stakeholders.

**287** You can find further information about our governance of the PR19 business plan preparation process, and how we assured ourselves that the plan is ambitious, innovative and of high quality in Section 10.5.

### Board assurance of response to Ofwat's initial assessment of plans (IAP)

The PR19 Board Sub-group met on 12 February to discuss Ofwat's initial assessment of NWL's business plan and develop the approach to be adopted in responding. The PR19 Board Sub-group focused on base costs, enhancement costs, PCs and ODIs. Detailed papers in each of these areas were scrutinised and challenged when the Sub-group met again on 4 March and NWL's strategy for re-submitting the business plan was agreed, subject to full Board approval. Following that meeting the Company developed draft responses to all Ofwat's actions and these were reviewed in detail by all members of the Sub-group, who raised a significant number of questions and challenges and suggested amendments, particularly in relation to areas where NWL is challenging actions or revisions required by Ofwat. Updated drafts of the responses were subsequently approved by the Sub-group. At a further meeting on 21 March the Sub-group sense-checked NWL's overall strategy in the light of the work done since the IAP was published, and agreed the approach to be recommended to the Board.

## 10.11 Board Assurance statement

continued

On 29 March the full NWL Board met and reviewed the assurance work on NWL's revised business plan conducted by PA Consulting, KPMG, PricewaterhouseCoopers and Deloitte as well as NWL's Internal Audit team, and unanimously approved the revised business plan and all the responses to the actions raised by Ofwat.

### Ofwat IAP test areas

**CA** Securing confidence and assurance

**RR** Aligning risk and return

### Board Approval

This statement has been approved by the full Board of NWL.

Name	Role	Signed
AJ Hunter	Chairman	
P Rew	Senior Independent Non-Executive Director	
H Mottram CBE	Chief Executive Officer	
Cl Johns	Finance Director	
AC Jones	Assets and Assurance Director	
M Fay CBE	Independent Non-Executive Director	
Dr S Lyster	Independent Non-Executive Director	
MAB Nègre	Independent Non-Executive Director	
FR Frame	Non-Executive Director	
HL Kam	Non-Executive Director	
DN Macrae	Non-Executive Director	
LS Chan	Non-Executive Director	



Our plan has been shaped by our customers, so it is fitting that the last words, taken from our acceptability engagement, are theirs.

“  
It seems that Northumbrian Water understand their customers and what they expect.  
Online survey  
45-64, C1

“  
Happy that the bills will decrease whilst services will not be effected.  
Have Your Say Forum  
45-64, C1

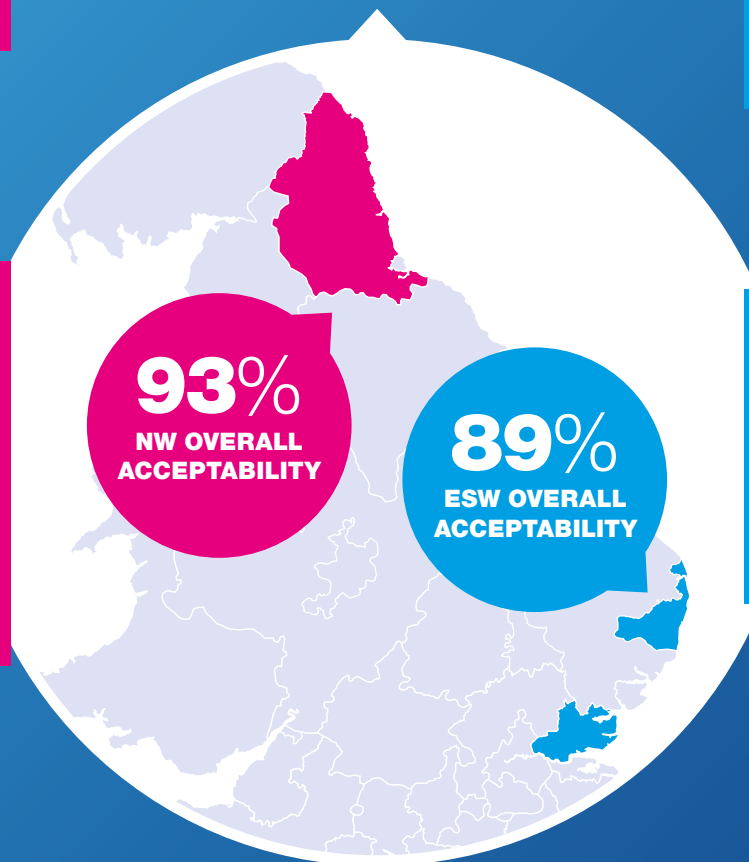
“  
Customer consultation makes sense as we are then taking part in the future of our water supply.  
Online survey  
45-64, C1

“  
I have accepted the plan. The thing I am happiest about is the fact that my bill will be 10% lower. This is really good, especially when my other bills seems to be going up quite a bit.  
Have Your Say Forum  
30-44, C1

“  
It is great for future generations to know they have safe water.  
Online survey  
45-64, C1

91%

OVERALL ACCEPTABILITY



“  
I can see that Essex & Suffolk Water are making a plan to improve, and they are making customers happy.  
Customer workshop – Barking  
35-54, ABC1

“  
The company has listened to customers' feedback when working on their future plans.  
Online survey  
30-44, DE

“  
Who could complain about lower bills with unrivalled customer service and significant improvements to the environment?  
Have Your Say Forum  
45-64, AB

“  
It reads as too good to be true doesn't it? What's the catch?  
Customer workshop – Barking  
55+, ABC1

“  
I trust Essex & Suffolk Water's judgement, I have faith they will do their best.  
Online survey  
45-64, C1