



Corporate responsibility & sustainability.

Corporate responsibility & sustainability report 2017/18.

This report tells you more of the story behind our operational performance for the year ending 31 March 2018. It reflects our nine sustainability themes and includes a wide range of detailed case studies showcasing what we do.

[CEO's introduction.](#)





How we do business.

Over £1 billion invested in the last year.
Placed our first Green Bond for £705 million.

[Find out more](#) ➔



Putting customers first.

4.17 out of 5 in our Ofwat customer satisfaction rating.

[Find out more](#) ➔



A precious resource.

99.96 per cent drinking water quality compliance.

[Find out more](#) ➔



Ensuring responsible operations.

We are positively contributing towards 4 of the UN Sustainable Development Goals (SDGs).

[Find out more](#) ➔



Addressing climate change.

Greenhouse gas (GHG) emissions 67 per cent lower than our 1990 levels.

[Find out more](#) ➔



Delivering efficient operations.

Over 22 per cent of our electricity requirements met through our own renewable generation.

[Find out more](#) ➔



Providing sustainable drainage.

15 per cent decrease in pollution incidents and 12 per cent reduction in sewer flooding.

[Find out more](#) ➔



Sustainable & safe workforce.

33 per cent reduction in lost-time injuries.
Our mean gender pay gap has reduced to 10.8 per cent.

[Find out more](#) ➔

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> About Thames Water.

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> Working with communities.

> Looking after biodiversity.

> Enjoying our sites.

> Our charitable giving.

> Sustainable finance.

> Innovating for life.

> Innovation in water.

> Innovation in waste.

How we do business.

We provide the essential service that's at the heart of daily life, health and enjoyment in London and the Thames Valley area. We aim to offer our service in the most sustainable way possible. For us that means we think about what's right for our customers and employees; how to make our business as efficient as possible; and how we can best protect the environment.



In this section of the report, we highlight how customer engagement underpins everything we do. We've engaged with nearly a million customers to understand what their needs are and what they want from us as we look to develop our strategy and long-term plans. We submitted our draft business plan to our regulator Ofwat on 3 September 2018 and published it on our website [here](#).

We also highlight how working in partnership with our stakeholders and regulators is fundamental to the way we do business. We know that the decisions we make today affect our ability to deliver our services sustainably in the future. That's why we're committed to working collaboratively with partners who can align to our vision and values to deliver excellently on our customer and stakeholder promises.

We describe our corporate responsibility programme which focusses on education, engagement and enhancement - designed to engage our people, customers and stakeholders on key business and environmental issues. We also show how we offer support to charitable groups within the communities we serve, through projects linked to our core business of providing essential water and wastewater services.

Sustainable and resilient financing is crucial to our long-term provision of essential services to customers. We outline how we're simplifying our structure and closing our Cayman Islands subsidiaries, and how we're increasing resilience and diversity in our funding portfolio by raising our first Green Bond.

We've also brought together three years' worth of key financial data, data sources, policy references and performance data in one place for all stakeholders by producing an environmental, social and governance (ESG) statement. This is part of our commitment to making information about our ESG performance freely available to all those who have an interest in our business.

We highlight our leading edge innovations which help us improve the service we give our customers and what we do as a business, as well as having a positive impact on our environment and the world's resources. We work with experts from across the globe, both inside and outside the water industry, to deliver a research and development programme which provides innovative solutions to the challenges faced by both the water and wastewater sides of our business.

Chief Executive's introduction.



*Steve Robertson,
Chief Executive
Officer*

At Thames Water, we are in a privileged position. We supply one of life's essentials to millions of people in London and the Thames Valley and it is a responsibility we do not take lightly. We maintain a symbiotic relationship with our customers every single day and it is vital that we retain their trust if we are to engage them positively across a range of issues. From our side, we have to act as a responsible company, caring for our customers and the environment.

This Corporate Responsibility and Sustainability report will tell you more of the story behind our operational performance for the year ending 31 March 2018 in line with our nine sustainability themes, and includes a wide range of detailed case studies showcasing what we do. You can find more details of how we've done against our operational targets in our Annual report and performance report, [Here for you in a changing world](#). We've also published our next business plan for 2020-2025 (PR19 - Price Review 19) which can be found [here](#).

All of us at Thames Water make decisions and take actions every day that affect our customers and the environment. We need to make sure those decisions result in the right outcomes, meeting our customers' immediate needs and safeguarding the delivery of our services to our customers over the longer-term. But we know we cannot do this alone. We need to work collaboratively with our customers, employees, partners, suppliers and regulators.

During the last year there have been many challenges, successes and some failures. This includes the dramatic loss of water from customer's pipes and our network which negatively affected our leakage performance, following the freezing temperatures and rapid thaw of 'Beast from the East' in March 2018. We learned important lessons about how we can support our customers and respond more efficiently when climate change affects us.

But addressing these challenges provides us with opportunities to become a more sustainable business. We've increased our self-generation of renewable energy, reduced pollutions and sewer flooding and improved customer experience by learning from past performance. We've continued to innovate and build on our strong performance in health, safety and wellbeing. During the year, we also successfully placed our first green bond which we'll use to refinance our existing green investment projects, providing an opportunity to diversify our source of funding.

I hope you will see in this report that we're fully committed to driving changes that will really improve the service we provide for our customers, and help protect and enhance the environment. We aim to become a more open, transparent and sustainable business, so if you would like some more information or have any questions, please [get in touch](#). It's a personal commitment from everyone at Thames Water to every one of our customers that we'll be 'Here for You' in a changing world.

Becoming more sustainable.

We're on a journey to becoming a more sustainable business. Sustainability is an increasingly important consideration as we seek to strike a balance between the level of service we provide to our customers, our impact on the environment and communities, the level of customer bills and future investment in the business. We're proud of the progress we've made in the last year and continue to work hard to deliver the desired results for our customers and the environment.



Business plan outcomes.

Over the last 12 months we have engaged our stakeholders. Their views have helped us develop our new strategy, which marks a new chapter for Thames Water:

- Be 'Here for you' – create lifelong customer advocates
- Use technology to turn customer insight into action
- Invest in resilient, proactively maintained digitised assets
- Protecting the environment
- A collaborative and capable team, dedicated to serving customers

We monitor our business and operational performance carefully against our 2015-20 business plan outcomes, using a number of key performance indicators (KPIs). Our KPIs are monitored by our board of directors and senior management on a monthly basis and are used to help us make effective decisions. Take a look at our [Annual Report and Annual Performance Report 2017/18](#).

Our sustainability policy.

To help us achieve these outcomes all our business activities are underpinned by our nine sustainability themes. This report provides an update on our progress across our nine sustainability themes and emerging sustainability and corporate responsibility response. Our commitment to becoming more sustainable is visible in our sustainability policy. Members of our executive team have responsibility for specific parts of our sustainability programme, with overall direction on sustainability matters provided by our external affairs and sustainability director, Richard Aylard.



1. Water, a precious resource



2. Sustainable drainage



3. Climate Change mitigation



4. Climate Change adaptation



5. Responsible operations



6. Customer inclusion



7. Efficient operations



8. Sustainable & safe workforce



9. Sustainable investment



[Sustainability Policy 2018 \(0.29MB\)](#)

Governance.

We take our approach to becoming more sustainable seriously and this is reflected in our business plan which is agreed by our board, executive team and regulators. Every day we look after over 15 million customers – each with individual needs – and every single one of them is important to us. It's our duty to make sure they receive a good quality product and service.

We regularly review the relative importance of issues material to our business, our customers, other stakeholders and the outside world. By focusing on these issues and reporting progress on how we are addressing them, we aim to become a more sustainable business.

Customer engagement underpins everything we do and our business plan for 2020-2025 (PR19 - Price Review 19), is focused on delivering the right outcomes for customers and the environment. As we look to develop our strategy and long-term plans, we've engaged with nearly a million customers to understand what their needs are and what they want from us. We know, for example, affordability and security of their water supply are some of the things that matter most. And this is informing our business plan, and our Water Resources Management Plan. We submitted our draft business plan to our regulator Ofwat on 3 September 2018 and published it on our website [here](#).

We cover the material issues and risks in our [Annual Report and Annual Performance Report 2017/18](#) which focuses on the most significant subjects agreed with Ofwat and our customers.

External Sustainability Benchmarking.

As well as our regulatory and financial submissions our Environment, Social and Governance performance is independently benchmarked to provide insights for investors into our sustainability performance. Last year, we were recognised for our commitment to sustainability by the influential Global Real Estate Sustainability Benchmark for Infrastructure (GRESB) survey.

The GRESB awards are a way of assessing the sustainability of infrastructure assets in terms of environment, social and governance performance. We're proud to have been recognised as a 2017 Infrastructure Asset Sector Leader for our commitment to managing our sustainability performance. We improved on the previous year's performance, finishing top globally in the 'water resources' category, and fourth globally for infrastructure across all the 160 businesses that took part. We also achieved Prime status in the course of the 2018 ISS-oekom Corporate Rating.



About Thames Water.

We are the UK's largest water and wastewater services provider, serving 15 million customers across London, the Thames Valley and surrounding areas. We look after more than 31,000km of water pipes, and 97 water treatment works, to provide 2.7 billion litres of water every day. We also look after approximately 109,000km of sewer pipes, and 351 sewage treatment works, to safely remove, treat and recycle 4.4 billion litres of wastewater back to the environment every day. This is all for an average combined bill of just over £1 a day per household.

We're regulated by Ofwat, the Environment Agency (EA) and the Drinking Water Inspectorate (DWI) and our customers will benefit from our £4.5 billion capital investment programme between 2015 and 2020 - the largest in the UK water industry. Our ultimate parent company, Kemble Water Holdings Limited, is owned by a consortium of pension funds and other long-term investors from the UK and around the world.



How we're regulated.

Over 50 million customers in England and Wales receive water and sewerage services every day by 32 privately-owned companies. We are the largest provider of water and wastewater services in England and Wales.

The ten publicly owned water and sewerage authorities were privatised in 1989 and a regulatory framework is in place to ensure customers receive high standards of service at a fair price. Our regulators control how we operate, make sure we're compliant with national and European legislation, and protect the interests of our customers and the environment.

Our key regulators are outlined below:

Ofwat.

Ofwat (the water services' regulatory authority) is the economic regulator of the water and sewerage industry in England and Wales, responsible for protecting customers' interest while ensuring that water companies finance and conduct their functions effectively.

Environment Agency.

The EA is the principal adviser to the government, and the main body set up to protect and improve the environment of England. It works in partnership with other organisations to reduce flood risk, promote sustainable development, and secure environmental and social benefits.

Drinking Water Inspectorate.

The DWI regulates the quality of drinking water supplied in England and Wales and ensures its safety and compliance with water quality regulations. This is done by reviewing the tests that we conduct on our drinking water, as well as carrying out inspections on water companies as and when required.

In addition to our regulators we also work closely with:

Department for Environment Food & Rural Affairs.

DEFRA is a UK government department supported by 33 agencies and public bodies responsible for setting policies and regulations on environmental, food and rural issues. DEFRA sets the overall water and sewerage policy framework in England, including setting standards and drafting legislation.

Consumer Council for Water.

The CCW is an independent body that represents customers' interests relating to price, service and value for money, as well as conducting independent research and investigating customers' complaints.

Engaging with stakeholders.

Our activities have significant impacts on our customers, stakeholders and the environment. We recognise that the stakeholders who represent these interests have a wide range of views and expectations, and we aim to engage with them and respond to their feedback.



We're constantly engaging with elected representatives, officials, Non-Governmental Organisations (NGOs), community groups and other key stakeholders in a number of ways:

- Meeting with them both formally and informally to understand their concerns
- Carrying out public consultations on our key projects and plans
- Communicating and explaining our plans for both large and small engineering projects
- Working in partnership with stakeholders to explore issues and deliver projects

Our work includes one-to-one briefings, round-table discussions, undertaking surveys, facilitating focus groups, independently-hosted online consultations, and site visits. Discussions cover strategic issues, such as market reform in the water industry and water resource management, as well as topics of local interest.

To fulfil our vision of 'Here for you' we are committed to using the customer insight and data from our engagement to inform our business decisions. We've learned from the past and we're using this insight to shape our future, which means data – information – insight – action has become our mantra, driving us to continually innovate to meet customers' needs both now and in the future.

Liaising with elected representatives.

Working with political stakeholders and the communities we serve is essential to delivering good customer service. Our region is served by over 100 local authorities and 143 MPs. We proactively engage with them about our work and how it may impact their area. This year we've attended approximately 200 meetings with councillors, MPs, officials and community groups covering a range of issues and projects from burst water pipes to drainage catchment plans.



Engaging on water efficiency with the Mayor of Bexley.

We know our stakeholders expect us to play an active role in shaping the future direction of the sector, ensuring our entire supply region receives a reliable service. We proactively engage in discussions with Members of Parliament, peers, Council leaders and London Assembly Members, across a diverse range of issues that affect water, wastewater and the wider environment, as well as changes to the legislative agenda.

Stakeholder feedback is valuable in helping us improve how we deliver projects, and to inform our future plans. We regularly invite stakeholders to our operational sites to give them a better insight into the work we are doing in their respective areas. We also encourage stakeholders to engage with us on emerging topics of key significance in their local areas.

London.

The heavy snow and freezing temperatures throughout February and March 2018 followed by a rapid thaw had a heavy impact on our region. Between 2 and 3 March, water demand increased by around 270MLd, with 70% of this increase due to bursts on customer side pipes. This led to some customers experiencing supply interruptions or having lower than normal pressure for several days. Since the bursts, we have worked hard to build relationships with the local communities affected, providing one-to-one meetings, drop-ins and formal public meetings as well as serving as a first point of contact for elected representatives. In recognising the seriousness of this incident, we continue to engage with a number of stakeholders, including emergency planners in local authorities and other resilience partners to work collaboratively on plans for responding to similar incidents in the future.

We're aware of the disruption our streetworks can sometimes have on communities, commuters and local businesses. We are pioneering a pilot scheme called 'Thames Connect' where utility companies share and evaluate project planning data to better coordinate streetworks and identify future opportunities where working together may be possible. We hope to coordinate with other utilities, plan better, save on resources but most importantly of all, limit the impacts on our customers where possible. Click on the case study below to find out more.



[Reducing disruption through collaborative working \(0.41MB\)](#)

Our smart metering programme continues to be rolled out across London, putting our customers in control of their water usage. We continue to engage with councillors and local communities across each of the 14 boroughs where we are currently installing this innovative technology. Our smart metering engagement bus has been visiting community events this summer, giving residents the opportunity to speak to our team about the introduction of smart meters in their homes. We aim to highlight the benefits of our programme and help the business promote our wider water efficiency drive, which is crucial with a changing climate and growing population. Click on the case study below to find out more.



[Delivering our smart meter programme \(0.34MB\)](#)

Community engagement plays an important part in maintaining relationships with our customers, and helps them to understand all the vital work we do to remove and clean their wastewater before returning it to the environment. We opened the doors of Mogden sewage treatment works, to give our customers and neighbours an opportunity to learn more about the site and meet our operational team. Click on the case study below to discover more.



[Community open day at Mogden sewage treatment works \(0.35MB\)](#)

The Thames Valley.

The focus of our engagement in the Thames Valley continues to centre on housing growth and the management of flood risk. The volume and scale of proposed housing across the Thames Valley is of great concern to many of the communities we serve, and so we continually assess opportunities for partnership working. We engage with local councils and community groups to better understand their local development plans and wider views, which we in turn use to help update our own infrastructure planning.

Engaging with our stakeholders on catering for additional demand on our water and wastewater services is particularly vital when considering plans for drainage infrastructure. We have formed partnerships across Gloucestershire and the Cotswolds to investigate options for managing flood risk. These partnerships have been sharing information and resources to investigate whether it is possible to mitigate the level of flood water to reduce occurrences of sewer flooding to customers' homes and businesses.

We held an open day at Aylesbury sewage treatment works, which was one of six sites in the Thames Valley where pollution incidents occurred between 2012 and 2014. The open day was held to show the public the progress we've made in preventing pollution incidents. Click on the case study below to discover more.



[Community open day at Aylesbury sewage treatment works \(0.33MB\)](#)

Customer engagement.

Our engagement programme puts customers at the heart of our decision-making. Through extensive customer research and insight gathering, as well as public consultation and direct local engagement, we're involving them in shaping our services and long-term plans.



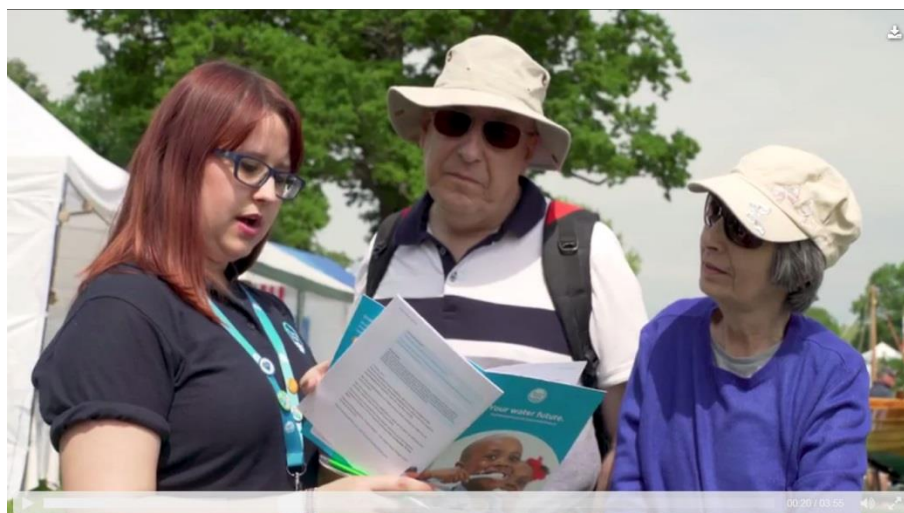
Engaging with customers on our future plans.

Shaping our long-term plans.

What our customers want defines what we do and it's important that we build and develop our long-term plans around customer feedback.

We're engaging with as many customers as possible on an ongoing basis and through a variety of channels to help us understand the needs and expectations of the diverse customer base we serve. For example, we've spoken to thousands of customers across London and the Thames Valley through events including stands in shopping centres, in their communities at local engagement forums and country shows and collected feedback via research groups. We've also created new opportunities for customers to have their say via social media through our digital campaigns.

Listen to our customers' views on the service they receive and what matters to them the most:



When engaging with our customers, we are held to account by our Customer Challenge Group (CCG) and, ultimately, Ofwat, the economic regulator. They expect customer-centric decision making informed by robust customer evidence. You can find out about our Customer Challenge Group [here](#).

Improving customer service and communications.

We undertake a diverse programme of insight-gathering to help improve the service we offer to customers and our communications with them. This includes our ongoing tracking surveys to monitor customer satisfaction, together with numerous bespoke studies on topics such as smart meters and sewer blockages, ensuring we reflect our customers' views in everything we do.

Read about our customer service and communications on our [putting our customers first](#) page.

Engaging with public debate.

We play an active role in the public debate about important issues affecting the water industry.



Elected politicians attending Tidefest, a festival to celebrate the River Thames.

We aim to meet with political representatives on a wide variety of issues in a number of ways. This includes a programme of discussions with MPs, peers, Council leaders and London Assembly Members, for them to find out more about what we do, and raise concerns on behalf of the people they represent.

It's been a busy year in UK politics and at a national level we've been working hard to actively contribute to the debate around key issues for us including the government's 25 Year Environment Plan and the debate on the ownership of the industry.

On a more local level we continued to engage with MPs and Councillors to discuss constituency issues including the impact of the beast from the east and high profile trunk main bursts as well as what we're doing to support development.

Much of our efforts this year focussed on talking to customers and stakeholders about our draft PR19 Business Plan and our draft Water Resources Management Plan. We want the views stakeholders to help shape our plans so we hosted a series of political lunches and briefings to capture their thoughts. Later in the year we held a series of roundtable events with business leaders to understand their perspectives on our plans. There will be line of site from the feedback we captured to the content of our future plans.

We continued to work closely with the Mayor of London's office and Assembly Members and helped shape the content of the Mayor's London Environment Strategy. Towards the end of the year we worked closely with the London Assembly Environment Committee on a review into the impact of non-flushable products like wet wipes on London's sewer network. We continue to work closely with the committee and its new Chair as the report is prepared for publication.

We started the year by helping shape Defra's Strategic Policy Statement to Ofwat and ended it by working collaboratively with the National Infrastructure Commission ahead of the publication of its 'preparing for a drier future' report at the end of the year. In addition to working with branches of government we continued to work closely with environmental groups and NGOs like Thames 21, Blueprint for Water, Wildfowl and Wetlands Trust (WWT) and London Wildlife Trust (LWT). A highlight of the year was celebrating a long awaited reduction in abstraction levels in the River Kennet (and the surrounding area) with our long term partners Action for the River Kennet (ARK).

Our stakeholder review 2017.

Our annual stakeholder review is an opportunity for our stakeholders to raise issues of interest and concerns about any aspect of our business.



Our stakeholder review.

Our 2017 event was attended by more than 100 stakeholders who had the opportunity to feedback to our senior management teams and hear first-hand how the business has performed over the past 12 months. Steve Robertson, Chief Executive, welcomed representatives from regulators, national and local government, environment and community groups and investors.

"Our relationship with you is critical to our business. Many of you are customers in your own right but just as importantly you represent the interests and perspectives of many of our customers and the precious environment we interact with. The board and investors of this company, with you as stakeholders and with the mainstream media, are at the heart of our drive for openness and transparency, putting customers at the heart of decision making."

- Steve Robertson, Chief Executive

Guests heard Lawrence Gosden Managing Director of Wholesale Wastewater, Sarah McMath Managing Director of Wholesale Water and Kelly Mcfarlane Managing Director of Customer Services and Retail, update stakeholders on their respective business units.

Lawrence spoke about a culture change when addressing the fine for historic pollution incidents. Sarah informed the audience of pioneering new technology and investment when explaining the company's failure to hit its leakage target, and Kelly talked of an increasingly coordinated response to events such as the burst water main in Euston, a few weeks earlier.

Anne Heal, chairwoman of the Thames Water Customer Challenge Group, spoke of the work her team are doing to hold the business to account and praised Thames' research into its customers and the number of conversations happening at all levels.

Guests were then invited to attend more detailed breakout sessions on water resources, water networks, wastewater network resilience and wastewater quality. Following these sessions, Chief Executive Steve Robertson set out his priorities for the business, before the event concluded with Steve, other members of his Executive team and Kenton Bradbury, Chairman of Kemble Water Holding Ltd., fielding questions from the audience.

"I'm really pleased with how well the event went. It complements the excellent work done across the business throughout the year to keep stakeholders up to date on the role we're playing in communities and in protecting the environment."

- *Richard Aylard, External Affairs and Sustainability Director*

Materials and presentations from the day can be viewed by clicking on the links below:

[ASR - Plenary pack \(1.46MB\)](#)

[Wastewater networks \(3.36MB\)](#)

[Wastewater quality \(1.28MB\)](#)

[Water networks \(1.18MB\)](#)

[Water resources \(1.32MB\)](#)

Being a responsible business.

Due to the nature of our business, we play an integral part in wider society and the natural and built environment. Our corporate responsibility programme is focused on education, engagement and enhancement designed to engage our people, customers and stakeholders on key business and environmental issues. We also offer support to charitable groups within the communities we serve, through projects linked to our core business of providing essential water and wastewater services.



Enhancing wildlife habitats on and around our operational sites.

Education.

We provide a range of activities for schools throughout our catchment area, working with young people on key topics such as saving water and helping to avoid sewer abuse by reducing the amount of wet wipes, fat, oil and grease that people put down the drain. We help students to understand our business through visits to our education centres, workshops, talks and hands-on challenges.

Engagement.

We actively seek to understand what our community and stakeholders expect of us, and look for opportunities to work in partnership with them. We work collaboratively on community projects that deliver both community and business benefits.

Enhancement.

We have more than 100 sites across London and the Thames Valley where we provide access for the community. Activities include fishing at Walthamstow reservoirs (Europe's largest urban wetland), enjoying nature in the heart of London at Woodberry Wetlands, bird watching at Kempton Nature Reserve, sailing on the Queen Mary reservoir, and learning about heritage with our partners at the

Victorian-era Crossness pumping station. We also work to protect and enhance wildlife habitats on and around our operational sites.

Supporting charities.

We offer support to charitable organisations in four main ways:

- Donations to charitable organisations for projects approved by our Charities Committee
- Encouraging and supporting our employees' own charitable giving by matching fundraising efforts and offering a payroll giving scheme
- Our Time to Give employee volunteering scheme
- A long standing strategic partnership with WaterAid, our principal charity

Our approach to being a responsible business is detailed in our Corporate Responsibility, Sustainability, Environment, Climate Change, Biodiversity, Heritage and Biosecurity policies. Click on the links below to find out more:

[Corporate Responsibility Policy 2018 \(0.18MB\)](#)

[Sustainability Policy 2018 \(0.29MB\)](#)

[Environment Policy 2018 \(0.27MB\)](#)

[Climate Change Policy 2018 \(0.30MB\)](#)

[Biodiversity Policy 2018 \(0.35MB\)](#)

[Heritage Policy 2018 \(0.23MB\)](#)

[Biosecurity Policy 2018 \(0.30MB\)](#)

Our education programme.

During 2017/18 we've engaged with over 21,000 young people through our education programme, which provides a wide variety of activities for primary and secondary schools throughout our region. We seek to engage young people on key topics such as saving water and helping to avoid sewer abuse by reducing the amount of wet wipes, fat, oil and grease that people put down the drain. We also support students in understanding our business through site visits, workshops, talks and hands-on challenges.



A school visit to an operational site.

Schools outreach programme.

Last year we visited more than 125 schools to deliver talks and activities to enhance learning about our business. Our community speaker programme, delivered by our employee volunteers, reached over 5000 students. The network challenge, our award-winning engineering exercise, allows children to design, build and test a water network. Last year over 1700 children took part in this challenge.

Click the link below to read more about our work with schools:



[Our partner schools \(0.33MB\)](#)

Our education centres.

We host school and community groups at our five education centres including the angling academy at our reservoir complex in Walthamstow. Two more centres are currently being constructed at Deephams and Long Reach sewage treatment works.

At our Walthamstow angling academy, over 500 young people visited the academy last year and enjoyed the opportunity to learn about water, the benefits of green spaces and the aquatic environment while learning to fish.

Our four education centres at Didcot, Hogsmill, Maple Lodge and Slough sewage treatment works provide a fun and informative education experience for school children, with over 3,300 pupils visiting

last year. During their visits, they have the opportunity to carry out water and energy related experiments in our on-site classrooms and take a tour of the operational works. Click the link below to find out more:



[Slough Education Centre \(0.29MB\)](#)

Our educational partnerships.

Partnership is a key aspect of our Corporate Responsibility Programme, and in particular our education programmes across London and the Thames Valley.

Our charity partners range from environmental to engineering organisations and all help to support our objectives of reaching young people whether it's by learning outside the school grounds or through an outreach activity within a school. This enhances the next generation's learning about water and the environment, and inspires them to take more interest in science, technology, engineering and maths (STEM).

Last year, we worked closely with Groundwork South, The Earth Trust and 'Get Hooked on Fishing' to reach a bigger audience and help deliver school sessions at our education centres and angling academy.

We partnered with the Engineering Development Trust to deliver a range of activities including our award winning 'Reservoir to Tap' challenge. We partner with several education organisations via our community investment programme. Creekside Education Trust and Museum of London Archaeology both offer very unique experiences which help students to better understand the links between rivers and their water supply. We are proud to work with these trusted organisations to enhance the learning of our younger customers.

Working with communities.

Working in partnership is central to our community programme, and we focus on activities and projects which deliver education initiatives for schools and our customers around water conservation and environmental protection. Our programme also includes projects to increase opportunities for public access to our sites, enhance water-related visitor attractions, deliver essential environmental and wildlife improvements, and protect cultural heritage.



Employees taking part in Time to Give volunteering opportunity.

Investing in communities.

In 2014, we started a new five year community investment programme worth £6.5m*. Last year we provided funding to 14 new and exciting projects and two feasibility studies with a total value of more than £840,000, all of which will be delivered by our community partners.

We completed an exciting new wetland at Prince of Wales Park in Enfield during 2017/18 which transformed open grassland with no real amenity value into a working wetland that will engage the local community. The local primary school have been engaged with the project all the way through and have been responsible for most of the tree planting on the site.

There was further recognition for our work at Firs Farm, a wetland nature reserve in Enfield, which won the 'Natural Environment' category for the Canal & River Trust's 2017 Living Waterways Awards. More money has now been pledged to Firs Farm for the development of a new community hub on the site.

"The highly integrated nature of this scheme, involving very active partners and close co-operation between different professional disciplines, is truly inspiring. The revealing of a hidden watercourse is not unique, but pursuing this aim to fulfil so many different goals is highly noteworthy, and project has already demonstrated its value as a catalyst for future work."

- *The Living Waterways Award Panel*

Click on the case study below to read more about our 2017/18 community projects:



[Working with communities \(0.47MB\)](#)

Time to Give.

Our people are empowered and encouraged to volunteer their time for some great causes in the community. During 2017/18, we again demonstrated community spirit and willingness to get involved through our 'Time to Give' programme. We had 1040 volunteering activities, collectively investing 6,393 hours across our region.

Over 3000 hours of labour by 382 of our people took part in conservation activities working with groups such as Berkshire Buckinghamshire Oxfordshire Wildlife Trust (BBOWT), Wildfowl and Wetlands Trust, London Wildlife Trust and Thames21, contributing to activities which help to improve the environment. We have worked on a number of Rivers and Wetlands Community Days where we were involved in habitat management. This included the reconnection of two colonies of water voles by improving bank side habitat with Chiltern Rangers. We have also carried out River Restoration projects, for example, managing grasses and riverside plants to help bees and butterflies, such as the rare Duke of Burgundy butterfly, recolonise the river bank.

We have 24 dedicated science, technology, engineering and maths (STEM) ambassadors in the business, supporting [our education outreach programme](#), six school governors and three employees who act as trustees in other charities. In addition, we had 172 business volunteers who supported the Network Challenge events in schools and colleges like the Reading and Newham University Technical Colleges.

At least 50 employees every year volunteer at Camp Mohawk to create better outdoor learning facilities. Camp Mohawk is a multi-functional day centre for children with special needs and their families. Throughout the year, the centre provides a range of activities, facilities and natural space to encourage children with a variety of special needs to play, socialise and learn in a secure and caring environment. We have helped and supported 1000 children with special needs last year.

"It can feel very isolating to be cut off from the majority of activities in our community... Mohawk is our most treasured resource and enjoyed by the whole family... The corporate community day volunteers who help to maintain and improve the facilities on the site do a hugely important task... It makes us feel we are a valued part of society to know that others are working towards achieving improvements to facilities designated specifically for children like our son..."

- *Family at the centre*

We're always looking to improve the programme of volunteering we offer to our employees, and we regularly ask for feedback after these activities. All our people have told us they would volunteer again, and would recommend volunteering to their colleagues, with 78 per cent saying it improved their work-related skills like communication, delegation and leadership. We also link our employee engagement surveys with our volunteering programme to assess how our volunteering programme helps to keep our people engaged as a business.

Read more about our clean-ups in East London by clicking on the case study below:



[Time to give - Greenway and Ridgeway clean-ups \(0.37MB\)](#)

During 2017/18 we will focus on:

- Walthamstow Wetlands – the Wetlands welcomed over 250,000 visitors in the first six months since opening in October 2017. As the site settles this year, we will be adapting and modifying to keep the Wetlands special and safe, including having to reinforce important site rules through engagement with visitors and signage. The London Wildlife Trust is encouraging volunteering and active participation by local communities in the management and conservation of the site, and all educational booked visits are fully booked.
- Wild About Thames – our flagship biodiversity engagement programme is being relaunched to increase its profile as a result of the interest in wildlife and the natural world from both our customers and employees. The programme is a series of events for employees so they

understand the rich abundance of nature on our sites through handbooks and identification guides, practical management of invasive species and community events such as public open days. We will continue to work with our leaseholders who manage sites on our behalf for nature.

- Education Centres – two new education centres at Longreach and Deephams sewage treatment works will be opening. Site visits by school children and community groups remain popular and the addition of these two sites will help our education programme become more accessible to schools across our area.
- Abbey Mills – in May 2018 we celebrated the 150th anniversary of the building of the iconic Bazalgette pumping station. We will be repainting the interior of the building in its original colours and continue to investigate how to increase access to the site.
- Farmoor visitor centre – we will be carrying out a feasibility study with current and potential future users of the Farmoor Reservoir site to investigate the need for a new visitor centre, which would provide visitors with a café, toilets, exhibition and education space.

**This fund was established by the company in 2014 in lieu of a fine for accidental misreporting of sewer flooding data to our regulator Ofwat.*

Looking after biodiversity.

We have an innovative programme of conservation activities and enhancements designed to engage our employees, customers and stakeholders on key environmental issues. Our emphasis is on conserving and improving biodiversity and access to nature for our customers and local communities.



Bird watching at Farmoor nature reserve.

Sites of Special Scientific Interest.

We manage 12 Sites of Special Scientific Interest (SSSI) which are legally protected wildlife areas. We work hard to look after these special places and to benefit the wildlife that flourishes there.

Around 660 hectares of our SSSI land area (approximately 50 per cent) has been assessed by Natural England as 'favourable', the highest status possible. For the remaining 640 hectares that are not currently meeting this target, this may sometimes be a result of wider population trends rather than specific conditions on site. We're working with Natural England and other specialists to understand how we can make even more improvements to the condition of these areas.

Invasive non-native species.

An invasive non-native species (INNS) is any non-native animal or plant that has the ability to grow and spread causing damage to the environment and preventing some of our processes working as they should on our operational sites.

We are continuing to identify the invasive species on our landholdings so that we can we can begin managing the impact and threat of them in a more proactive manner. Read more about our proactive approach to managing invasive non-native species in our case study below:



[Managing invasive non-native species \(0.58MB\)](#)

Wild about Thames.

We run a programme of events called Wild about Thames to raise awareness about the ecological importance of our sites and the wildlife that can be found on them. These events help educate our people, as well as our customers, about the importance of our work to conserve and enhance biodiversity.

We ran 14 Wild about Thames events in 2017/18 which highlighted the importance of habitats such as woodlands and wetlands. Attendees learned about specific habitats and their associated wildlife, and took part in some active management. Click on the case study below to find out more:



[Wild about Thames events \(0.71MB\)](#)

Enhancing our sites.

We invested around £500,000 on 33 different projects to improve biodiversity and access at our sites in 2017/18. This includes building boardwalks, planting orchards and hedgerows, creating bird hides, and improving existing and creating new wetland areas. Many other projects helped to improve visitor experience and enhanced biodiversity and included creating wader scrapes, building education facilities, improving signage, fencing and walking routes at numerous sites and updating a club house belonging to a sailing group. The case study below highlights some of the work that has been taking place at our nature reserves and operational sites:



[Enhancing our nature reserves and operational sites \(0.74MB\)](#)

Enjoying our sites.

We want to engage positively with the communities we serve. Whether you want to try fishing at our Walthamstow reservoirs, bird watching at Crossness nature reserve, sailing on the Queen Mary reservoir, or simply enjoy learning about our heritage with one of our partners like the Kempton Great Engines Trust. We have more than 100 sites currently open to our community – and there are more in the pipeline.



Fishing at Farmoor reservoir.

Investing in site enhancements.

During 2017/18, we invested around £500,000 on 33 different projects to improve biodiversity and access on our sites. One project transformed unused and overgrown filter beds on a sewage treatment works into reed filters benefitting the wildlife on site and in the local area. The reed filters are visible to the general public as they arrive into the railway station at Bicester Village. In order to improve visitors experience around our sites and make them more accessible, we have created more bird hides, new footpaths and signage.

Access to our heritage.

London Open House 2017 formed part of our ongoing commitment to open up as many of our sites of interest as we can to the public.

This year we were pleased to welcome over 1,000 people to our sites including Abbey Mills, King George V pumping station and the historic Oak Room at New River Head, the former headquarters of the Metropolitan Water Board.

The work over the past 10 years has now seen the Hampton to Kempton Water Works Railway Society being granted a lease on the land adjacent to the Kempton Water Treatment works. This will allow them to start work on the next phase of their heritage community passenger steam railway project on parts of the original 1915's rail that transported coal from the Thames to the supply the Triple Expansion engines housed at Kempton Water Treatment works.

Read more about our Grade II* Isle of Dogs Pumping Station and the Royal celebrations at Queen Mary Reservoir by clicking on the case studies below:



[Isle of dogs Pumping Station heritage \(0.43MB\)](#)



[Royal celebrations at Queen Mary Reservoir \(0.40MB\)](#)

Enhancing our wetlands.

Our 211 hectare Walthamstow Wetlands project opened to the public in the Autumn of 2017. This Heritage Lottery funded project is a partnership between ourselves, the London Borough of Waltham Forest and the London Wildlife Trust. We will continue to manage both coarse and fly fishing on site, and work with our partners to offer a greater visitor experience. The site will welcome visitors to learn about the rich history of water supply and view the amazing wildlife found on site - click on the link below to read more:



[Walthamstow Wetlands \(0.31MB\)](#)

Our fisheries.

Both our Farmoor and Walthamstow reservoir fisheries continue to appeal to a great number of anglers. Around 27,000 anglers enjoyed either Specimen Carp Fishing at Walthamstow reservoir or experienced fishing trout at Farmoor.

Walthamstow's appeal has now been widened with the opening of the Walthamstow Wetlands with more members of the community engaging with anglers at the sides of the reservoirs. The trout fishing at Walthamstow has greatly improved since the addition of the new fish screen on reservoir 4 in order to prevent fish from moving elsewhere on site.

Farmoor Reservoir was once again selected to host the World Bankmaster championships. The reservoir is now recognised as a bank fishing competition venue for the UK's largest competitions, and regarded as a home water for many fly fishing clubs. Farmoor has added five more fishing boats to its fleet, in order to attract large boat fishing competitions and improve the day fishing experience. Farmoor has a very interactive and popular social media presence which has encouraged many new visitors to the site.



[Farmoor Reservoir fishing \(0.34MB\)](#)

Improving green corridors.

We're working alongside the London Boroughs of Bexley, Royal Borough of Greenwich, Peabody and the North West Kent Countryside Partnership to help extend and improve our urban green corridors. This includes the Ridgeway improvement works in South London which have now been completed – click on the link below to read more:



[Ridgeway path improvements \(0.35MB\)](#)

Our aim is to enhance the local environment and create a better place for people to live, travel and work. By working in partnership, we want to achieve a much wider and lasting benefit for local communities and the wildlife which lives along these important wildlife corridors.

Our charitable giving.

We donated £654,000 to the independent Thames Water Trust Fund in 2017/18. The Trust approved grants for over 1,200 customers who require extraordinary levels of support, through donations of life-changing essential items such as a fridge or a washing machine, with an average value of £232. Our funding also helped fund 18 organisations across our catchment area to provide long-term support for customers by providing debt and money advice services.



Supporting our principal charity, WaterAid. Pictures by WaterAid/Dennis Lupenga.

Our Charities Committee meets quarterly to consider applications from external charitable organisations seeking funding. Our own people are also eligible to request matched funding up to £2,000 from the committee, for charities for which they've been raising funds. In addition, we provide a customer assistance fund which supports clearing the arrears of bills for customers who genuinely cannot do so themselves.

Water Aid campaign.

Our employees play a key role fundraising for our principal charity, WaterAid, where we're aiming to raise £2million over four years to improve access to safe water and sanitation and raise awareness on the importance of hygiene in two towns in Malawi: Kasungu and Mponela. In 2017/18, we have raised £316,675 with a further £46,344 of income pledged. Find out more by clicking the link below:

 [Our WaterAid campaign \(0.50MB\)](#)

We need to empower people in Malawi, particularly local council officers, water board employees and communities, to make a more sustainable change. We're keen to ensure we're sharing skills as well as developing capabilities because it's not just about technology, it's about people.

Fundraising for charities.

During 2017/18 our people raised £38,175 for 40 different charities, which also received matched funding of £31,534. This included participation in the MacMillan Cancer Support's World's Biggest Coffee Morning, and International Day of the Disabled for Guide Dogs for the Blind. Our employees

also donated £85,062 through our payroll giving scheme, with Thames Water matching this with a donation of £8,242.

We donated £103,395 to 21 charities and community groups via grants which supported our criteria of promoting either 'water and the environment' or 'water and health'. We once again supported KIDS charity in Hackney, London, by providing funding for disabled children and their carers to take part in a programme helping them to discover and learn about the river environment that runs alongside their activity playground in Hackney with a particular focus on plastic rubbish in our waterways.

"Thames Water's grant has really enabled the disabled children we support at KIDS Hackney playground to explore the water around them. They have developed a keen interest in the river, launched a campaign to protect it and enjoyed discovering their environment. It was fun and exciting and many children have opened up in new ways in the process. Thank you!"

- *Claira Scott-Gray, Kids Playground Manager*

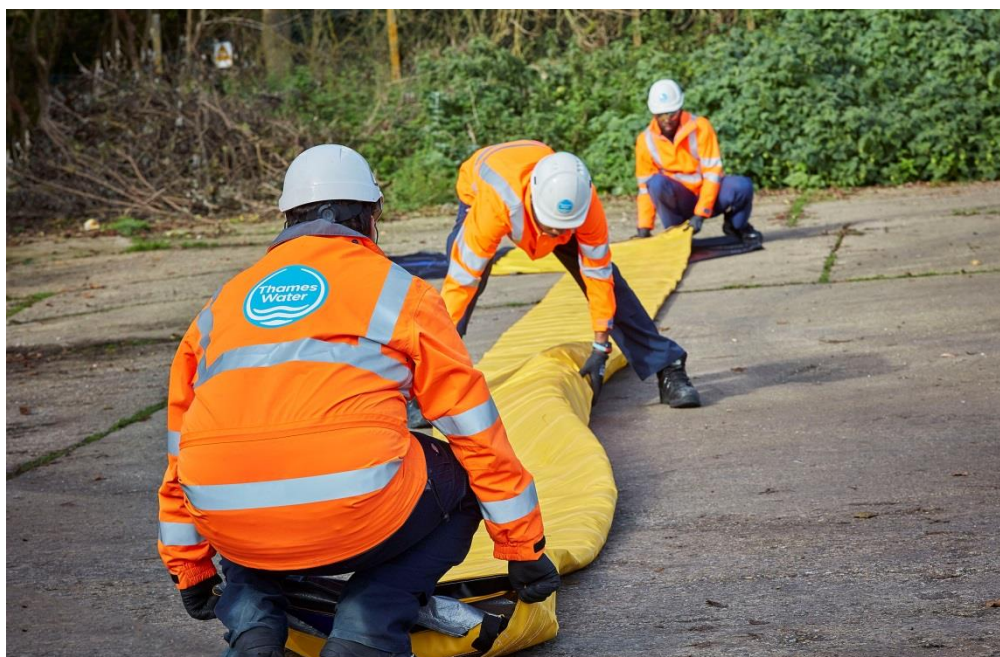
We also provided a grant to a small gardening charity in Vauxhall called 'Roots and Shoots' who provide training for young people who have struggled in a traditional learning environment. The grant was used to create a drought resistant and bee pollinator garden.

"Roots and Shoots was delighted to receive funding from Thames Water to refurbish our site in Fitzalan St SE11 into a Pollinator Garden to benefit the bees, moths and butterflies. We aim to provide a haven for all types of insects and wildlife by planting a wide range of plants to suit our urban environment and enhance the biodiversity for this area in the heart of London. All the gardening work will be carried out by our students that attend our centre as well as five local special needs schools as part of their gardening/environmental activities. Primary and nursery school groups, as well as residents from the local community will be able to enjoy this garden for that will be both functional and beautiful for all to enjoy."

- *Linda Phillips MBE, Director, Roots and Shoots*

Sustainable finance.

Solid and sustainable financing is crucial as we invest to ensure the future provision of our essential services, while keeping bills affordable and protecting the environment around us.



Investing in flexible flood resilience.

Over the last 13 years we've been investing, on average, over £1 billion a year in our business, yet our current bills remain the second lowest in England and Wales at £383 a year (2018/19). As a provider of essential services to over 15 million people across our region, our customers rely on us to spend their money wisely – this is something we take very seriously. With some of the UK's poorest areas in our region, we recognise the need to provide extra support for customers who are in financially vulnerable circumstances. You can find more about this in our [Putting Customers First](#) section.

Closing our Cayman Islands companies.

As part of our revised approach to managing the company, we're committed to simplifying our structure and closing our Cayman Islands subsidiaries is part of this. While these companies provided no tax advantage to us or our shareholders, they complicated perceptions. We've made significant headway in our process to close them, such that at the end of September 2018 these companies were put into liquidation and they will be formally dissolved by the end of March 2019.

Responsible funding.

To ensure our investment programme is affordable for customers, we borrow money to bridge the gap between bills and spend. For every £1 from customers we need an extra 22p to fund our spending (2017/18). By spreading the cost of our investment and managing our debt over a number of years, we also ensure the generations that will benefit from the improvements are those who will be helping to pay for it – this makes our bills fairer and more sustainable.

Resilience and diversity in our funding portfolio are important drivers in ensuring our financial stability over the long term. During the year we successfully placed both our first Canadian bond and our first green bond. With so much of our activity focused on delivering environmental protection, it makes absolute sense for us to be an 'early adopter' of this type of debt issuance in the UK. It's also a good example of our sustainability policy in action and aligns with our focus on the UN Sustainable Development Goals.

The green bond was a £705 million US Private Placement (USPP), which allowed us to raise long dated funds with an average maturity of around 10 years, at historically low interest rates. As a USPP, the bond has also provided an opportunity to diversify our source. This debut green bond has been used to refinance projects such as the upgrade of Deephams sewage treatment works, extensions to our metering programme, mains replacements and the Thames Tideway connecting works.

As part of the process we've established a new Green Bond Framework based on key principles outlined by the International Capital Markets Association. For a progress update on our Green Bond Framework, click on the documents below:



[Green Bond Framework](#)



[Green Bond Framework progress update](#)

Environment, Social and Governance Statement.

We're committed to being open and transparent about how we operate our business and we're going beyond statutory requirements with the publication of our first Environment, Social and Governance (ESG) statement. While we publish ESG data and information in other documents, we've published this statement to improve the accessibility of this information. It contains three years of data, with references to the sources for this information, for a range of key performance measures to give balance and context for our latest performance information.



[Environment, Social and Governance statement](#)

A fair dividend policy.

In order to attract the long term profile of investor that benefits a company like Thames Water, we are committed to distributing dividends when it is appropriate to do so. The Board is also mindful of the privilege of our position as a monopoly provider of essential services and has agreed the parameters of a new and fair dividend policy, with full support of shareholders. This can be found in our [Annual Report and Annual Performance Report 2017/18](#).

While we focus on meeting the performance expectations of customers, our investors support our decision not to pay dividends to external shareholders for the rest of this regulatory period so the money they would have received can be reinvested. In addition, during the 2020-2025 period we have agreed we will only issue modest total dividends of around £100 million, meaning a total dividend expectation to shareholders of only £100 million over eight years. When dividends are paid we will be clear about their level, how they relate to delivery for customers and why they have been awarded.

Taxation.

We take pride in fulfilling our responsibilities on tax and are transparent about how much we pay and why. You can find our tax strategy [here](#). We pay around £192 million a year in taxes such as business rates, payroll taxes and environmental taxes. We incur around £138 million directly, mainly through business rates, and collect and pay around £54 million on behalf of our employees.

The UK Government allows companies to claim tax relief on capital investment and also provides tax relief for interest costs on debt which has been raised to fund investment. As such, due to our capital investment programme – currently over £1 billion a year - and interest costs on debt, we don't currently pay any corporation tax. It is only our customers who benefit as the reduced cost is fully passed to customers through lower bills. We are not expecting to pay any corporation tax in the current, or next, regulatory period.

Gearing and financial resilience.

We are financed by a combination of debt from our lenders and shareholder equity retained in the company. Our level of debt has increased over the last decade, driven largely by the scale of our investment programme. We are very focused on ensuring we run the business efficiently and effectively for the benefit of all stakeholders – and an important component of that means being financially resilient.

Our level of gearing (as at 31 March 2018) is 81.3 per cent and we have strong investment grade credit ratings with two of the major credit ratings agencies – Moody's and Standard and Poors. By maintaining a credit rating stronger than that required by Ofwat under our licence we are, in the long run, able to keep our bills lower than they would otherwise be.

During the development of our plan for 2020-25 we spoke to nearly a million customers and took their views on a range of issues. Customers told us they want us to be more financially resilient and we aim to reduce gearing to 76.2 per cent and increase the equity buffer from around £2 billion to £4.7 billion between 2020 and 2025.

Remuneration.

Our approach to remuneration directly aligns reward with our vision and what our customers value most. Our Chief Executive Officer (CEO), Steve Robertson, has agreed not to take bonus payments until 2020, as a personal commitment to improving the performance of the business. He will only receive a bonus payment following the end of the current regulatory period (2015 – 2020) if we meet our critical customer commitments.

Longer term incentives for the CEO and other senior leaders are determined by delivery of regulatory outcomes for environment and asset health, as well as stretching targets for customer service performance. Shorter term incentives focus on delivery of the programmes which will achieve these outcomes. For more information about our finances, see [Our finances explained](#).

Innovating for life.

By identifying and implementing leading edge innovations, we're constantly trying to improve the service we give our customers and what we do as a business, as well as having a positive impact on our environment and the world's resources. This is why we're working with experts from across the globe, both inside and outside the water industry, to deliver a research and development programme which provides innovative solutions to the challenges faced by both the water and wastewater sides of our business.



Helping make our work safer and quicker with vacuum excavation.

Water and waste.

The challenges of providing our customers with water services are different from those associated with wastewater services. Each has its own research needs, so we have two distinct teams dedicated to finding new and innovative ways for us to provide both water and wastewater services. We're also investigating new ways to provide a more sustainable service for our customers, manage our environmental resources more efficiently, and become more resilient to the challenges we'll face in the future.

Innovation in water.

We want to be more resilient to challenges such as climate change and an ageing infrastructure, while also embracing the future as an intelligent water company that delivers great service by using data better. To help us achieve this, we're continuing to seek out innovation by working in collaboration with our partners, suppliers and academia.



Innovative pilot-scale algae removal filter.

Surveying trunk mains.

Trunk mains are our largest water pipes – the motorways of the water network – and when they burst it has a significant impact on our customers. We're constantly trying to learn more about what causes these bursts, and where they have the worst effects, so we can identify the best ways to invest in improvements where it's needed most. In August 2017 following a burst in Lee High Road in December 2016, we conducted the first ever 'in-situ' trunk main survey in the UK using a pipe scanning technology not previously used with cast iron mains of this size. It involved using a torpedo-shaped scanning device lowered into the pipe. While it didn't deliver the output we were looking for, we learned important lessons from this trial. We're now building a dedicated trunk main test facility at one of our sites, so we can test a variety of trunk main technologies without needing to interrupt water supplies to customers. Read more by clicking on the case study below:



[Looking for invisible flaws in our water mains \(0.42MB\)](#)

Smart water abstraction.

Better use of data can help transform how we abstract water from rivers and improve security of supply for our customers. We've developed a new interactive map to maximise the use of real-time data from the Environment Agency (EA) to fill our large London reservoirs. With this new tool, we can better monitor river levels and identify opportunities to abstract water more quickly and efficiently to boost reservoir levels when rivers are high, but slow the process down when river levels are low.

Using data from the EA, which is refreshed every 15 minutes, the abstraction tool reduces the need to relay information by phone, streamlining the process and driving efficiency in the process. Find out more by clicking on the case study below:



[Innovating to boost reservoir levels \(0.24MB\)](#)

Fighting algal blooms.

Algal blooms are a natural phenomenon and when they occur they can block processes in our water treatment plants and reduce the volume of treated water produced. This is happening more often and is likely to increase with future climate change so work to minimise their impact is of huge importance. We have continued to trial whether Mecana filters, which are traditionally used as filters in sewage works, can prevent the flow of algae from reservoirs into the water treatment process. The research into the use of these filters hasn't been straight forward, but its potential success is of huge significance to the industry and the delivery of customer service. Click on the case study below for more details:



[Algal filters - increasing resilience to climate change \(0.38MB\)](#)

Sand filter skimmer.

Slow sand filters are an essential part of water production and need to be drained and cleaned every few weeks, keeping them out of action for around four days. We have been designing an innovative underwater skimming machine that could significantly reduce the amount of time the filters are out of action and therefore help boost water production. Once built and tested, the underwater skimmer could bring further improvements such as making cleaning processes more efficient, minimising the disruption to the biology of the filter and reducing health and safety risks. Read more by clicking the case study below:



[Advances in slow sand filter skimming \(0.42MB\)](#)

Looking ahead to next year, we will continue to test leading edge technology and scanning devices for condition inspections of our Victorian cast iron trunk mains. We'll also be building a test facility at our Kempton innovation centre, which will accelerate development in condition based tools at Thames Water as well as across the industry. We'll also continue with our day-to-day innovations, helping make our routine maintenance tasks and treatment processes more efficient, sustainable and resilient for the future.

Innovation in waste.

Innovation is essential for our future, and it will help us to provide a sustainable future for our customers and the environment. We need to move to more innovative solutions, because traditional approaches can't always provide long-term and more sustainable answers.



Looking for leaks with an unmanned aerial vehicle (UAV) and thermal imaging camera.

Demand for innovation has been growing, while new technologies and approaches have become technically and economically feasible. We're driving innovation in our business through laboratory, pilot and full scale testing. We've continued to focus our efforts in three specific areas:

Waste networks.

Our waste network has been serving our customers for many years. But with increasing pressures of climate change, population growth and ageing infrastructure, innovation is key to maintaining cost efficiency and improving performance.

Smarter networks will help us operate more efficiently and improve our wastewater services for our customers. Understanding our networks using sensors and improved modelling tools will also help us target and optimise appropriate solutions and investment more appropriately. New technologies and different ways of thinking are needed to provide sustainable solutions for the future, so our key areas of focus are as follows:

- Smarter networks – installing more monitors to help us control our network, which will improve our operations and investment decisions
- Fats, oils and grease (FOG) management – enabling FOG interception, collection and extraction to utilise as an energy source and reduce blockages
- Infiltration detection and solutions – deploying novel detection methods, treatment solutions and prediction models to create effective and more sustainable solutions
- Assessing the condition of high risk assets – developing understanding of our assets, helping us to assess risk and prioritise future investments, and ensure great service for our customers.

Read more about how we are identifying types of drainage intervention and where it is needed to reduce the risk of sewer flooding by clicking on the link below:



[Sustainable drainage systems planning tool \(0.30MB\)](#)

Waste process innovation.

We expect the Environment Agency to place limits on phosphorus levels for more than 100 of our discharge points within the next ten years. Existing environmental standards are also being tightened, so it's becoming increasingly important for us to develop novel techniques for removing and recovering these nutrients effectively.

To do this, we'll use innovative technologies and processes to create more sustainable wastewater treatment. This will help our sites become more energy efficient, maximise the amount of renewable energy we're generating, and produce valuable products from nutrient removal and recovery processes. Our key areas of focus are as follows:

- Energy efficiency – deploying additional instrumentation and more sophisticated controls at our larger sites to reduce carbon footprint and energy usage
- Low tech solutions for small sewage treatment works – developing green technologies for sustainable treatment and better customer service
- Sustainable processes for removing and recovering phosphorus – recovering resources like phosphorus is key to becoming a more sustainable business
- Designer bugs for smarter treatment – we're testing several 'smart bugs' which have the potential to revolutionise nutrient removal and recovery in wastewater treatment. Click on the link below to read more:



[Smart bugs to revolutionise nutrient removal and recovery \(0.64MB\)](#)

Sludge and energy.

We're constantly trying to improve the performance of our new and existing sludge treatment processes. By maximising the amount of energy we generate from sewage sludge, we're aiming to become grid energy neutral on our larger sites, while also reducing our reliance on land recycling. Innovative thinking is crucial, whether we're developing a new process or optimising an existing one. Our key areas of focus are as follows:

- Maximising renewable energy production – by increasing our understanding of anaerobic digestion and deployment of more advanced control
- Sustainable odour treatment – developing novel and sustainable odour treatment to reduce our impact on the environment
- Supporting and deploying Thermal Hydrolysis Process (THP) – our work helps increase the efficiency and capacity of our existing and new assets
- Advanced energy recovery – we're demonstrating the benefits of pyrolysis as an alternative to our sludge powered generators in east London. Learn more by clicking on the link below:



[Managing sludge with Advanced Energy Recovery \(0.36MB\)](#)

> Putting customers first.

> Customer service strategy.

> Improving our service.

> Keeping things affordable.

> Providing priority services.

> Measuring our service.

Putting customers first.

We provide water, the essential service, for nine million customers and sewerage services for 15 million customers across London and the Thames Valley. Our customers are at the heart of all we do and we're committed to delivering excellent service by making the complex simple, building trust through clarity, providing a service with clear benefits that sets us apart and delivers effective results.



In this section of the report we outline how we're providing a more sustainable service for our customers in the future, and how we're actively engaging with them to improve our customer experience satisfaction using our 24/7 social media service and other services like our website and phone line.

We highlight the priority services we provide to our customers who have extra needs that sometimes make them more vulnerable. The customer help we provide ranges from financial assistance, to alternative formats for communication and ensuring those with physical challenges can get water in an emergency. We're working hard to increase the number of people on our priority services register, so we can fully understand who needs extra help in an emergency. The various forms of financial support we offer are explained, including flexible payment plans, helping to clear arrears and reduce bills for those on a low income.

Customer service strategy.

Our customers expect the water we provide to them to be of the highest quality and that we take away and treat wastewater before returning it safely back to into the environment. Most of our 15 million customers enjoy the services that we provide them on a daily basis and don't need to contact us. However, occasionally people do need to contact us, either to let us know that they are moving home, require assistance with their bill or because something has gone wrong with their water or wastewater services. Whenever customers do contact us, we will understand what help they require and respond promptly to their needs.



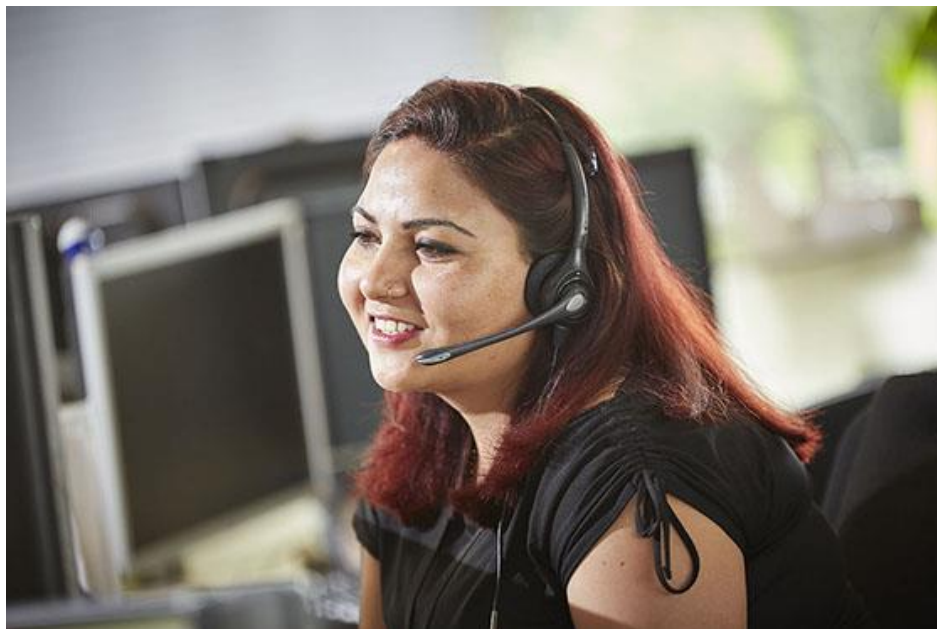
We have listened to what our customers have told us and we have recently restructured our business into a customer journey led organisation. This means that we have now structured our business in a way that customers want to see us - as 'One Thames Water' - a single organisation with clear lines of accountability for delivering the end-to-end customer experience. This will help make sure that all parts of the business are focussed on collaborating to proactively resolve customer issues and deliver high quality products while providing a service that is personal, affordable, valued and right first time.

Customer experience programme.

In 2016/17, we began a two year journey to deliver our Customer Experience Programme with the intention of delivering common working practices across our whole business from delivering top quality drinking water, to taking away and treating wastewater and to delivering accurate bills to customers which provide good value for money. We are now one year into our journey and an update of our progress is provided within this section of the report.

Improving our service.

Our customers deserve and expect a reliable and worry-free service that delivers for them 24 hours a day, 365 days a year. We've been focussing on making great improvements to our customer service, and last year we set the foundations for the next phase of our customer service strategy.



Our customer improvements.

We have created new journey dashboards to measure our performance which mirror the key reasons why customers contact us. We are also becoming much smarter with data that is available to us and turning this into management information, such as performance reports, which in turn gives us insight to make the right changes to improve our services.

Last year we made two significant improvements for customers who may experience a problem with their wastewater services, for instance, sewer flooding or a blockage. The first improvement included new and better management of our work scheduling, which helped resolve more issues first time. The second improvement focused on improving the service we provide to our customers whose issues cannot be resolved first time. This included keeping customers informed of progress through telephone and SMS contact, and changing how our planning teams operate by providing them with greater ownership of a customer's issue through to resolution. These changes were implemented during the 2017/18 regulatory year.

For customers who experience a water service issue, for instance a visible leak, no water or low pressure, we have launched a similar change programme in which our immediate focus is improving the likelihood of resolving the issue promptly by ensuring work is scheduled to the right people preventing repeat work or duplication of effort. This is complimented by changes to the way in which we keep our customers informed so that customers can expect a consistent service whether they experience an issue with their wastewater or water service.

Last year we conducted a pilot for our moving home journey, which is when customers let us know they've moved house. This enabled our front line staff to take more ownership and resolve matters at the point the customer contacts us. Our people have received additional coaching to enable them to have the right conversation with customers so that we set their account up correctly, discuss the best tariff and payment arrangements and identify if a customer is in vulnerable circumstances and would benefit from being on our Priority Service Register.

During 2017/18, we created a new incident management team which can be quickly mobilised at any time during the day or night to respond to the needs of our customers alongside our frontline. This

dedicated team helps us to deliver a smarter way of handling major incidents which can cause disruption to our customers. We have introduced a dedicated team of customer representatives who are sent en-route to our customers within one hour of the incident to provide additional support during major events and sensitively handle individual requirements.

We make sure customers are proactively kept up to date during events, such as burst water mains, with quick and proactive updates across our website, social media channels and interactive voice response (IVR) system via our call centre. This has helped reduce the amount of customers needing to contact us for updates via telephone by 50 per cent. This improvement in service was recognised by the industry when the team were shortlisted for the 'Best Customer Experience' Award at the UK Customer Satisfaction Awards 2018. We are introducing a new policy for compensating customers for the inconvenience caused from incidents such as flooding and no water. This will be in place by the end of 2018.

Social media service.

We offer customer service on social media 24 hours a day, seven days a week and 365 days a year. We received over 270,000 messages via social media in 2017/18, over 200 per cent increase on the previous year, which included revenue and operational queries, feedback, complaints, media enquiries and more. We have improved our Social Media platform which enables us to better prioritise Twitter and Facebook messages. Our social media team won the Most Effective Customer Experience in Social Media bronze award at the European Contact Centre and Customer Service Awards 2017. You can find out more about our social media service in the case study below:



[Our social media customer service \(0.35MB\)](#)

Keeping things affordable.

It's important to us that we're supporting our customers in times of need - and this includes times when our customers are struggling to pay their bills. Affordability continues to be just as high a priority for us as it is for our customers. We offer various forms of support, including flexible payment plans, helping to clear arrears and reduce bills for those on a low income.



We are committed to ensuring all our customers in financially vulnerable circumstances are supported as part of our longer-term customer experience plans. We offer a range of options to support them.

We also run a customer assistance fund to support customers with their water debt. We also work with them to help them remain debt free, including enrolling them onto social tariffs and referring them to charities such as Step Change, for household debt advice. We understand that customers in water debt may also have wider financial issues so we help customers with basic living costs outside our water and wastewater services through a dedicated trust fund.

Over the past year we have helped around 56,000 of our most financially challenged customers via our two social tariffs - [Watersure](#) and [Watersure Plus](#) - up 48 per cent on 2016/17. These have benefitted a wide range of lower income families including disabled, those needing extra water for medical conditions, larger families and older people. We know there are many more customers eligible for a social tariff and next year we aim to increase customers we help financially to over 80,000.

Customer Assistance Fund.

Our Customer Assistance Fund can help customers who genuinely cannot pay their bills. During 2017/18, we've helped over 7,500 customers with an average support payment of £638. We've contributed over £650,000 to the independent Thames Water Trust Fund. As well as helping nearly 1,300 customers directly during 2017/18, with donations of life-changing essential items such as a fridge or a washing machine, the fund also supports agencies providing debt advice, including the Citizens Advice Bureau. More information about our Customer Assistance Fund can be found [here](#).

Our social tariffs.

We have two social tariffs – Water Sure and Water Sure Plus – and in 2017/18 we helped over 56,000 households via these schemes, up 48% on 2016/17. The average discount per combined services customer is expected to be £231 and waste services £102. To understand who has affordability issues so we can be 'here for customers', we're raising awareness of our services through targeted campaigns and promotion via charities and partners. More information about WaterSure and WaterSure Plus tariff can be found [here](#).

We also work with Stepchange to offer debt advice to customers in financial difficulty. This is offered after the customer has been supported with the Customer Assistance Fund, WaterSure or WaterSure Plus.

Providing priority services.

We provide free extra support to vulnerable customers who need additional assistance because of disability or other personal circumstances which make it difficult to communicate with us or access our services with ease. We treat each customer as an individual by being as flexible and helpful as we can.



In 2017/18, our register of those who require assistance because of disability or other personal circumstances was over 60,000 households. These customers have been signed up to our priority services register, and receive different support depending on their needs – this ranges from receiving their bills in alternative formats, to being given additional support during a supply interruption such as provision of bottled water.

Being there when needed.

The rapid freeze thaw incident in early 2018 caused problems for many water users. We're sorry that happened and are investing heavily to make our plans more robust should it happen again. As well as fixing leaks faster, we will be identifying better ways of providing alternative water supplies, improving our communications and making the most of links with other service providers.

We will also be getting more people on the ground when there is a problem, be it to deliver water to the housebound or tweet updates on progress. We are actively growing our Customer Ambassadors and we'll have over a hundred of these later this year. As part of our frontline support we are developing a relationship with the Red Cross to provide relief through their volunteer network during an incident.

Identifying customers proactively.

We are not waiting for individuals to approach us and register for extra help, instead we are also being proactive to identify groups or geographic areas of people that are likely to benefit. As well as developing our approach with expert charities such as Age UK and the Citizens Advice Bureau, we are also working with other utility companies, industry bodies and other partners such as Berkshire Fire and Rescue to see how we can make it easy for customers to register.

We are developing training to help our staff across the business – from those fixing pipes to those taking calls – to identify customers in vulnerable situations so then we can ensure they receive the most appropriate type of support. We are also developing how we use data and technology to understand which customers might need extra help in a water outage. If we can better understand the demographics we'll be better able to tailor the support we offer.

As part of our long-term plan we aim to increase the number of customers on our priority services register to 400,000 by 2025, so we're ready to help them in an emergency.

Priority services.

We offer a number of free services for customers who have specific requirements, so that we can be as helpful as possible and make our services easy for all our customers. We provide services such as:

- Large print, braille, audio format and coloured background paper for customers with sight problems
- Text-phone, sign language interpreters, dedicated mobile phone number for texting during emergencies for the deaf and hard of hearing
- Additional help in the event of a water supply interruption or sewage flooding for the less mobile
- A doorstep password scheme if we ever need to visit customers at home
- We continue to operate a 24-hour telephone service, via Language Line, that provides an interpreter in any language, within 30 seconds
- We also work with energy providers UK Power Networks (UKPN) and Scottish and Southern Electricity Networks (SSEN) to make sure customers in vulnerable circumstances can get any additional help they require from their other utility providers too.

We want to make sure that you can easily access all our services and read the information we send you. More information can be found on our website [here](#). Contact us to tell us what you need and we will do everything we can to help you:

- Call us on our Priority Services line: 0800 009 3652, Monday to Friday from 9am to 5pm
- Minicom/textphone: 0800 316 6899
- Email: ecs@thameswater.co.uk
- Write to us at: Thames Water, PO Box 508, Swindon, SN38 2TX.

Measuring our service.

Most of our 15 million customers never need to contact us about the service they receive every day. However, when customers do contact us, we'll respond promptly, make every effort to understand what they need, and work out how we can help so that they only need to contact us once.



Service Incentive Mechanism.

The Service Incentive Mechanism (SIM) is used by Ofwat to measure the level of service we provide to our household customers who have contacted us. Our SIM performance has continued to improve with our best ever performance this year of 78.43 points, compared to 77.26 out of 100 in 2016/17. We know we need to go much further so we have set ourselves another challenging target for 2018/19 which reflects our commitment to provide quality service our customers expect when they contact us.

Getting it right.

We have seen improvements in all elements of the SIM metric despite some very challenging circumstances caused by the cold weather in early 2018. Total household written complaints are 4 per cent lower than last year. While we aim to eliminate the need for customers to contact us about our service, we have continued to emphasise the resolution of complaints promptly and without customers having to contact us again. We have made further improvements in household complaint resolution with 95.2% of complaints being resolved after the first contact, second stage complaints 19% lower than in the previous year and no customer complaints needed to be investigated by the Consumer Council for Water. We recognise there's still more to do, and we're confident we will continue to build on this success.

SIM performance	2016/17	2017/18
Total written complaints	17,809	17,039
Second stage written complaints only	1,007	818
Complaints accepted by the Consumer Council for Water	1	0
Unwanted telephone contacts	511,792	509,964
Customer satisfaction score	4.12	4.17
Total SIM points	77.26	78.43

Improving customer satisfaction.

Our overall performance in the SIM quarterly customer satisfaction survey has improved to 4.17 out of five in 2017/18 from 4.12 in 2016/17.

We have continued to see a steady improvement with customer satisfaction in our wastewater services to 4.22 in 2017/18 from 4.16 in 2016/17 as our Customer Solution Centre has been fully embedded.

Although satisfaction with our water services improved to 3.89 in 2017/18 from 3.81 in 2016/17, our performance in this category is not at the level where we would like it to be and will continue to be a focus point for us.

Customer satisfaction with regard to our revenue services has increased to 4.29 in 2017/18 from 4.26 the previous year which included our best ever performance in this category of 4.51 in the second quarter. While we're pleased with the progress we've made in some areas of the business, we know we need to do much more.

Key performance indicators.

We have developed another suite of measures alongside SIM to demonstrate our intentions and measure the services we provide for our customers. These key performance indicators include:

- Additional customer satisfaction measures
- How quickly we resolve complaints at the first stage
- The number of metered bills we send out based on actual meter readings
- Providing new online account management facilities for our customers

To see the progress we've made so far, read our 2017/18 annual performance review [here](#).

> A precious resource.

> Testing the quality.

> Catchment management projects.

> A resilient supply. 

> Security of supply.

> Abstractions and low flows.

> Managing leakage.

> Measuring the flow.

> Reducing what we use.

> New resource options.

A precious resource.

Every day we supply an average of 2.7 billion litres of safe high quality drinking water to around nine million people across London and the Thames Valley. It's our statutory duty to provide this precious resource to everyone who needs it. We aim to do this in a way that has minimal impact on the environment – while still keeping our customers' bills affordable and meeting the needs of an ever-growing population.



In this section of the report, read about how we're continuing to provide industry-leading standards of drinking water and how we've introduced specific initiatives and programmes, agreed with our customers and approved by our regulators, for reducing the risk presented by lead pipework. These have been highly successful, significantly reducing the levels of lead in drinking water. We also describe our 'catchment management' approach which is a more sustainable way to reduce pollutants in the catchments where we abstract water, avoiding the need for additional water treatment which would affect the environment and our customers' bills.

We outline how we're actively managing our current water resources efficiently and effectively through leakage reduction, metering and water efficiency. Leakage is one of our biggest priorities, and it's one of our biggest challenges too. Read about our performance for 2017/18 and how our recovery plan is helping us get back on track by 2020. Meters put our customers in control of their water usage and bills, and they help us manage our water supplies much more efficiently too, so we're rolling out smart water meters to all homes across our region. Read about how we're metering our network in a range of different ways to help us manage our projected shortfall in supply.

Encouraging water efficiency is an essential part of our long-term plans to manage water more sustainably and we highlight with a number of case studies how we're delivering water efficiency initiatives for households, businesses, schools, local authorities and housing associations. We still believe we'll need extra water resources in the future, so we explain how we're exploring all the available options.

Testing the quality.

Our drinking water quality is still among the best in the country. In 2017 we continued to provide industry-leading standards of drinking water, passing 99.96 per cent of tests against stringent UK and European criteria. To maintain our high standards, we carry out thousands of tests on water samples routinely collected from our treatment works, as well as our service reservoirs and randomly selected homes and businesses. In 2020 a new approach of measuring compliance is being introduced that will replace the existing measure, and in 2017 we demonstrated a strong performance using this method.



Clean and safe drinking water.

Last year we provided an average of 2.7 billion litres of drinking water to our customers every day. This water was sourced from rivers and boreholes, before being treated at one of our 97 water treatment works, and distributed to our customers through our network of water mains.

Our water quality regulator, the Drinking Water Inspectorate (DWI), uses a measure known as mean zonal compliance to assess drinking water quality. We test 39 different parameters which are used to assess the quality of water across our area of supply. We carry out more than 425,000 tests a year on water samples from source to tap, to make sure our water quality remains among the highest in the world.

Maintaining excellence.

To maintain our high standards of drinking water quality, we've continued to focus on identifying areas of our water network where there's a higher risk from lead pipes. Once we've identified these areas, we can remove these pipes as part of a targeted programme. We plan to replace 36,500 lead communication pipes by 2020.

The number of customers who contact us with concerns about drinking water quality remains low, but we know that we can always do more. We'll continue our ongoing optimisation of our water treatment processes and also targeted flushing of our mains to drive performance in this area.

Lead in drinking water.

Lead pipes may have been used to connect individual properties to our network of mains before the 1970s. We've been working hard over many years to mitigate the potential risk to public health from the presence of lead pipes, and we've introduced specific initiatives and programmes, agreed with our customers and approved by our regulators, which have been highly successful.

The number of samples above the current drinking water standard has fallen from 10 per cent in 2001 to less than 1.5 per cent in 2017. However, we recognise that there's still more to do to achieve our objective of removing the risk of lead in drinking water. This will require a long-term approach to ensure the best outcomes for public health, our customers, and future generations. Click on the case study below to find out more.



[Lead in drinking water \(0.29MB\)](#)

Catchment management projects.

During 2017/18 we've continued to explore more sustainable ways to reduce the amount of pollutants like pesticides and nitrates which get into the rivers and groundwater sources in the catchments where we abstract water. This 'catchment management' approach aims to tackle the problem of pollution at source, avoiding the need for additional water treatment which would affect the environment and our customers' bills.



Catchment management today.

We know that catchment management can offer better value or bigger benefits than more traditional capital investment solutions. That's why we're managing a wide range of catchment projects across our region, in partnership with a vast number of stakeholders.

For projects focusing on mitigating pesticide pollution, we're working closely with farmers, land managers, agronomists and the wider pesticide industry, to tackle metaldehyde pollution at source and prevent this pesticide from reaching watercourses. In turn, this will help to protect our sources of drinking water.

In autumn 2017, we ran projects across 20 catchments, working with roughly 300 farmers in the Thames Water region. Half of the projects involved replacing metaldehyde slug pellets with alternative ferric phosphate products, whilst the remainder of the projects were based on the Payment for Ecosystem Services (PES) approach. PES makes payments to people who manage land or other natural resources in exchange for ensuring that the environment provides services like clean water. We're now working in 25 catchments in readiness for autumn 2018, and we plan to expand our projects further in coming years.

Some of our most important current projects with farmers include protecting our sources of drinking water from pesticides like metaldehyde. Click on the case studies below to find out more:



[Payment for Ecosystem Services project \(0.46MB\)](#)



[Metaldehyde product substitution project \(0.54MB\)](#)

Smarter water catchments.

The whole idea of catchment management has come a long way, but it still hasn't been successfully implemented on a large scale with large numbers of stakeholders.

We believe that bigger benefits and better value can be achieved by seeing the environment as a system and tackling multiple challenges together, as well as recognising the benefits of harnessing natural processes and working on a wider scale. This is the premise of our Smarter Water Catchments initiative.

Smarter Water Catchments is a step change in our approach to catchment management, which will let us test how well this more holistic approach can work. This will involve a variety of very different but equally ambitious projects to address the kinds of challenges we face across our whole region.

We hope our new approach will also show how catchment management doesn't just apply to the rural, upland areas where it was pioneered. That's why we'll be running a major project in London, the most challenging and complex of all our urban catchments. This will be particularly important in helping us to identify long-term solutions to the pressure that rapid population growth is putting on the capital's wastewater infrastructure. Click on the case studies below to find out more:



[River Crane - urban catchment management \(0.49MB\)](#)



[River Evenlode - rural catchment management \(0.43MB\)](#)

You can find out more about our Smarter Water Catchments initiative on our website [here](#).

A resilient supply.

Water is essential for everything we do - from having a drink, to washing our clothes, and flushing the loo. It's also essential for a healthy environment and a prosperous economy. Many people think there's plenty of water in the UK, but the south east of England is one of the driest parts of this country, and London gets less rain than Rome, Dallas and even Sydney. Our water supplies are being stretched as the number of people living in our area increases, at the same time as the amount of water that we can take from rivers and underground sources is getting less, due to changes in the climate and the need to protect the environment.



We need to plan ahead to make sure we can continue to provide a secure and reliable water supply. The social, economic and environmental costs of water restrictions are substantial – severe water restrictions could cost London's economy around £330m a day. That's more than £10 billion for a month's interruption of water supplies.

Planning ahead.

Every five years we produce a Water Resources Management Plan, which sets out whether we have sufficient water for our customers. If there's a deficit, the plan also sets out what we'll do to address it.

Over the past four years we've been working on our draft plan which covers the next 80 years from 2020 to 2100. We forecast a significant water resources challenge in our area, and the wider south east. So it's critically important for us to plan for the long term, because the decisions and investments we make now will determine the level of service that we can provide to our customers into the future.

We engaged with our customers while we were developing our plan, to understand their preferences for the level of water security they want, as well as the options for managing demand and providing more water, and all the factors we should consider in making these decisions.

We've also engaged with stakeholders to make sure we understood their views and priorities, and worked closely with other water companies in the south east to take a coordinated approach to planning for the future, and make sure that all our plans offer customers the best possible value for money.

We undertook a public consultation on our draft plan in spring 2018 and have revised our plan in response to the feedback received and in light of new information. We published our revised draft

plan in October 2018 and have provided an opportunity for comment on the changes we've made to our draft plan.

What's our plan?

First and foremost, it's essential that we manage our current water resources efficiently and effectively. Here's how we'll do this:

- **Reducing leakage:** An ambitious programme to cut leakage by 15 per cent by 2025 and to halve the amount of water lost through leakage by 2050.
- **Metering:** Continued roll out of smart meters across our region. Smart meters provide our customers with essential information to help them to understand and reduce the amount of water they use, and provide us with vital information to understand and manage our network efficiently, including pinpointing and tackling leakage. We also offer all customers a Smarter Home Visit, which provides a personalised water use audit and free installation of water saving devices best suited to their needs. By 2020, we'll have installed over 300,000 smart meters, and we plan to install 700,000 more by 2025.
- **Water efficiency:** Helping our customers to use water efficiently. We're developing new and innovative approaches to encourage wise use of water. We'll also work with local authorities and housing developers to encourage them to build to even higher water efficiency standards, and with government to set the right framework and incentives to encourage water-efficient behaviour.

Security of supply.

Water is essential for everything we do, so it's vital we're able to balance supply and demand. We're responsible for ensuring we have sufficient water to meet our customers' demands, and we measure this through the security of supply index (SoSI) with our regulator, Ofwat.



How SoSI works.

The weather determines how much water is available for our customers, but it's becoming increasingly unpredictable. During periods of hot and prolonged dry weather, the amount of water available to us can decrease, affecting our ability to meet our customers' future needs.

SoSI is used to assess the extent to which we're able to guarantee our planned levels of service. We compare the amount of water available during a dry year with typical customer demand, network leakage and customer side leakage to assess if we have enough water. SoSI also lets us assess water resources, leakage and demand management issues, and track changes in the service we're offering our customers.

If we achieve lower scores on the SoSI index, restrictions on water use may be needed more often. The acceptable frequency of water restrictions depends on the agreed levels of service we plan for but we're continuing to work hard to avoid more restrictions than our customers view as acceptable.

How are we doing?

With the pressures of population growth and climate change, it's becoming more difficult to balance supply and demand for water each year.

Our leakage performance during 2017/18 had an impact on our SoSI performance and we finished the year 2 points down on 2016/17's performance of 99. This reduction in score is caused by the projected shortfall between supply and demand in London, but many of our other areas, stretching from Guildford to Banbury and Cirencester, are still in surplus.

Our look forward.

Every five years we produce a Water Resources Management Plan (WRMP) setting out how we'll maintain a sustainable balance between water supplies and demand over the next 25 years, as a minimum. It's critically important for us to plan for the long term, because the decisions and investments we make now will determine the level of service that we can provide to our customers into the future. In February 2018 we published our draft plan, called the draft Water Resources Management Plan 2019, which sets out how we plan to provide a secure and sustainable supply of water for our customers over the next 80 years, from 2020 to 2100.

We ran a public consultation from 9 February to 29 April 2018 to get feedback on our draft plan. We published a report on 3 October 2018 setting out the comments we received and explaining how we've taken these into account, as well as new information, in revising our draft plan. We are holding a further consultation on the changes made to our draft plan for eight weeks, from 3 October to 28 November 2018. The report on the consultation and the revised draft plan has been sent to the Secretary of State for the Environment, Food and Rural Affairs (Defra), to everyone who participated in the consultation and published on our website [here](#).

Abstractions and low flows

About 70 per cent of our water comes from rivers, and the remaining 30 per cent from groundwater sources. Removing this water, a process known as abstraction, is regulated by the Environment Agency (EA) through its abstraction licensing process. During 2017/18, we achieved 99.97 per cent compliance with our daily abstraction licences.



Our compliance.

The table below shows our record of compliance with daily licences for public water supply (per cent) over the last five years:

	2013/14	2014/15	2015/16	2016/17	2017/18
Daily abstraction per cent compliance	99.91	99.89	99.85	99.93	99.97

Our partnership approach.

In some areas, abstracting water can contribute to low flows in rivers, which may be ecologically damaging. Last year we continued to work with the Environment Agency on our programme to investigate the risk of impact from abstraction on river flows, and reduce this risk where necessary.

Our joint approach starts with an initial investigation to understand the conditions in a river. If this shows that our abstraction is environmentally harmful, we carry out an options appraisal to assess possible solutions. These can include:

- Reducing how much water we take.
- Abstracting water at different times.

- Supplementing the area with water from other sources.
- River restoration that is designed to improve the health of rivers, which can involve improving habitat by narrowing sections of river or changing their course.

Our work in action.

Last year we installed an eel protection screen at our large intake where we abstract water from the River Thames at Hampton. This screen will help to protect eels from being drawn into our reservoirs, and help the recovery of the endangered eel population. Click on the link below to learn more:



In the past we've investigated the effect of our abstractions from the River Thames - both on the lower freshwater part of the river, and in the tidal estuary. We found that during periods of low flow in the upper tidal section, the level of oxygen in the water can reduce, affecting the aquatic life in the river. We're now investigating what we can do to mitigate this impact by increasing the levels of oxygen in the effluent from Mogden sewage treatment works during these low flow periods.

Abstraction Incentive Mechanism.

We've recently been implementing a new measure to try to minimise the impacts of taking water at a number of our abstraction sites. This measure is called the Abstraction Incentive Mechanism (AIM). It's designed to encourage water companies to reduce the perceived impact of water abstraction at environmentally sensitive sites, and it aims to complement existing management tools like National Environment Programme (NEP), Sustainability Reductions and Hands Off Flows on abstraction licences.

Implementing AIM doesn't affect the security of our water supplies, and it doesn't require any capital investment. We've implemented AIM at sites where we can use an alternative source of water when flows get low in the associated watercourse.

We've agreed 5 AIM sites with Ofwat and the Environment Agency. These sites are:

- New Gauge - River Lee.
- Pann Mill - River Wye.
- Axford - River Kennet.
- North Orpington - River Cray.
- Pangbourne - River Pang.

Last year we complied with AIM at each of these sites.

Our future plans.

Building on work which we completed in 2016/17, we'll be implementing the following measures at three of our treatment sites:

- Pann Mill: We've agreed with the Environment Agency that we'll reduce the licence before March 2020, and transfer part of it to Medmenham near the River Thames. We'll then increase the amount of water we transfer from this source to High Wycombe.
- Childrey Warren: We'll close this source to provide a sustainable solution for the Letcombe Brook. Allowance for this is included in our Water Resources Management Plan (WRMP) and Business Plan. Design work will be completed this summer, followed by archaeological investigations, and construction will begin early next year.
- Waddon in south London: We're carrying out an options appraisal which will be completed in summer 2018.

In 2015 we started investigations on the Lower Lee and the River Chess at Chesham, to see if our abstractions are having an adverse impact on the environment. We've now completed these investigations, and concluded that we don't need to reduce abstraction on the River Lee. But we've made an allowance for potentially reducing abstraction at Hawridge in the Chess catchment, and we'll aim to complete an options appraisal for this in 2018.

Last year we started similar investigations on the Upper River Darent, where we found that no reduction in abstraction is needed, but an options appraisal is required. We've also undertaken investigations into abstractions in the River Cray catchment, where we've drilled some new observation boreholes, and we'll complete this investigation by the end of 2018.

We're also planning river restoration at eight sites across our supply area, and we'll be doing river restoration works on the Amwell Magna Fishery and the Oxford Watercourses in summer 2018.

Managing leakage.

Reducing leakage is one of our greatest priorities. It's still a massive task given the size, age, location and complexity of our network, but we've started to make progress. While there's a lot to do to achieve our longer-term goal we're confident we're going in the right direction, and we're now publishing monthly leakage reports on our website [here](#).



The challenge.

With over one third of our water pipes over 100 years old, and an average pipe age of 80 years, we have the oldest network in the UK, and much of it is also intertwined with other utility pipes buried deep beneath the streets of the capital. Two thirds of leaks on our network of 31,000km of water pipes are under London, but most of these leaks never reach the surface, which makes it harder for us to find them. And even when we know where they are, it's often very difficult to fix them without causing significant disruption for everyone trying to go about their daily lives above ground.

Before we try to create additional water supplies, it's essential for us to manage what we already have more effectively. Leaks are inevitable on a network of our enormous size and age, but it's vital we invest wisely to reduce leakage and to improve our resilience.

Our leakage performance.

We welcome the conclusion of Ofwat's investigation into our leakage performance. With £55 million of automatic penalties, combined with the £65 million we've put forward to compensate for our performance, a total of £120 million will be returned to our customers.

We set ourselves challenging targets for this five year regulatory period, because we know it's very important to our customers and the environment. After beating our leakage target for ten years in a row, we missed it in 2016/17, and we know the condition of our water network has been failing some of our customers.

Following last year's disappointing leakage performance, we put a structured recovery plan in place to bring performance back to our target level of 606Mld in 2020, backed with an extra £140 million

investment. The significant problems our customers experienced in March during the 'Beast from the East' had a negative impact on our leakage performance, putting us back a few steps from where we wanted to be, however, we are still on track to meet our target for 2020.

We haven't met our regulatory target for this year, with leakage up on last year at 695MI/d. Although we won't meet next year's target either, we're on track to meet our target in 2019/2020.

Our aspiration is to bring leakage down by a further 15 per cent during the next regulatory period (2020-2025) and to halve it in the longer term, and we've changed our approach to lay the right groundwork to achieve this.

Getting back on track.

In 2015 we developed an innovative model with our infrastructure partners, which outsourced leakage detection and repair. This proved ineffective, and led to us completing fewer repairs than were necessary to meet our 2016/17 target. So we've made changes to bring leakage management back in-house again, and our recovery plan is designed to get us back on track by 2020.

With cost and disruption limitations we know we can't eliminate leaks overnight, but we're being smarter in our approach to leakage reduction to ensure we make the most of our investment and deliver more for our customers in the long term.

We've been increasing the speed of our operational response to leaks, with our best 'find and fix' leakage repair rate since 2011/12. We're now completing an average of 1,000 leakage repairs every week. With 25 per cent of leaks on customer pipes, we're also helping customers by fixing these leaks for free.

The number of Thames Water employees increased last year, partly because we've brought resources in-house, and we've recruited more skilled frontline employees to complement field teams and analysts who provide valuable insights from our data.

We've also been investing in new technology such as 26,000 acoustic loggers which locate leaks through the noise the escaping water makes, smart meters which can detect continual flow at a customer's property which could indicate a problem, data analytics, and work management systems. All of these have improved our ability to use data about our network to help us find leaks. Read more by clicking on the case study below:



[Identifying and fixing leaks with smart meters \(0.39MB\)](#)

Connecting to our network without permission is illegal. It's also unfair on customers who pay their bills and it affects how we calculate leakage. In the interests of all our stakeholders, we've increased our resources to tackle this problem in recent years, and we've seen a 25 per cent rise in investigations since 2016/17. Find out more by clicking on the case studies below:



[Cracking down on illegal connections \(0.29MB\)](#)



[Cracking down on illegal standpipes \(0.34MB\)](#)

While we know we still have some way to go, we're confident that we're on the right path to achieve long-term leakage reduction, and we know that our focused investment will deliver more for our customers in the end.

Communicating with customers.

To help our customers and stakeholders keep up to date with how we're cutting leaks, and understand our performance, we're now publishing monthly leakage reports on our website [here](#). The faster we find out about leaks, the more water we can save. So we've made it easier than ever for our customers to help us find and fix leaks quicker. Our customers can now call our free Leakline on 0800 714614, tweet [@thameswater](#) using the hashtag [#tweetaleak](#), or visit our website [thameswater.co.uk](#) to report a leak online.

Measuring the flow.

We're fitting water meters, through a range of different programmes, to help us manage the shortfall in supply that's been projected for our area - which has been classified as seriously water stressed, meaning that demand for water is higher than the amount available.

We meter our water network in a range of different ways, and we're fitting meters at all our customers' homes as part of our progressive metering programme, which started in London in 2015. Customers can opt to have a meter even if we're not yet working in their area, and we're continually replacing old, broken and missing meters. We also fit large non-billable meters on pipes which feed large buildings, to help us find leaks as part of our bulk metering programme.



Installing a smart meter at a customer's home.

Our progressive metering programme.

London and the Thames Valley is already one of the most densely populated parts of the country, and managing water supplies will only get more difficult with population growth and climate change. By 2045, we forecast that there will be a shortfall of water equivalent to the amount needed by over two million people if we take no action.

Our progressive metering programme is at the heart of our government approved plan to reduce demand for water. We're fitting free smart water meters at all customers' homes in our region, starting in London. In 2017/18, we installed just over 98,000 free smart meters through our progressive metering programme, bringing the total to over 243,000 across fourteen London Boroughs - Bexley, Brent, Bromley, Camden, Croydon, Enfield, Greenwich, Hackney, Haringey, Islington, Lewisham, Newham, Redbridge and Waltham Forest.

Smart metering technology also helps us to find leaks by identifying when there's always water flowing through a meter. Metering also means that our customers' bills reflect the amount of water they use, making it a fairer way to pay. In 2017/18, 1,437 leaks were repaired at customer properties after being detected by smart meters.



[Metering - securing future water supplies \(0.34MB\)](#)

Opting for a meter.

If we're not yet fitting meters in an area as part of our progressive metering programme, customers can request a meter through our optant metering programme at any time. In 2017/18, over 16,500 customers had a meter fitted through this programme. All the meters we fit in London will be smart meters.

Replacing existing meters.

When meters reach a certain age, or become faulty, we replace them. In 2017/18, we replaced over 19,600 existing meters across our region. When we replace an existing meter in London, we replace it with a smart meter.

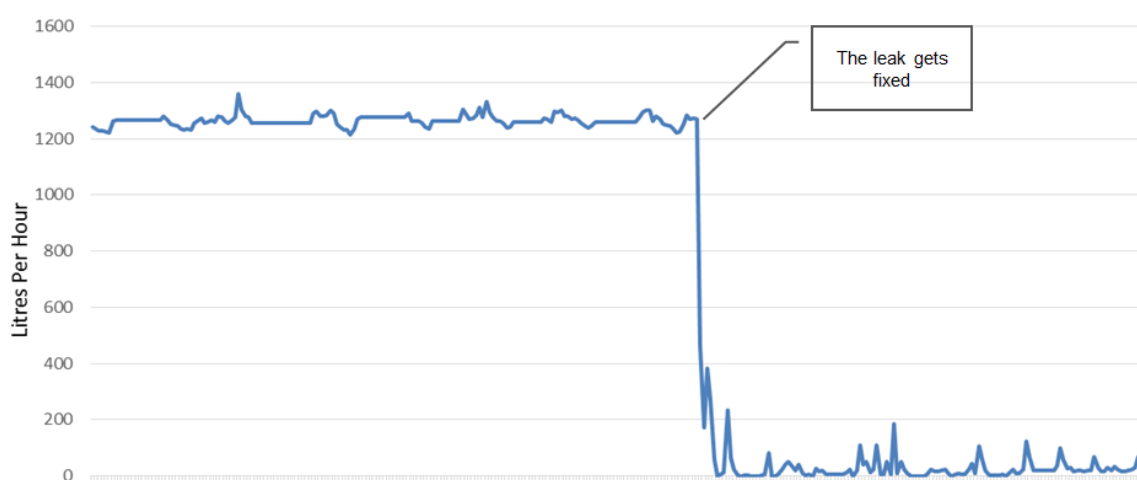
Bulk metering programme.

To help us find leaks, we fit meters called 'bulk' meters on large private supply pipes which serve many buildings or properties. These meters aren't used for billing, but they allow us to identify leaks which can then be fixed, preventing water being wasted. In 2017/18, fitting over 550 bulk meters helped us to save the equivalent of over 5.7 million litres of water each day that was being lost through leaking pipes on customers' supply pipes.

Finding customer-side leaks.

Smart meters, which we're now fitting across London through our progressive metering programme, are able to show if water is continuously flowing through a meter for a sustained period. This allows us to pinpoint leaks more quickly and accurately than ever before.

The graph below shows how we can identify and repair leaks using hourly smart meter data. Without a smart meter, this leak on a customer's supply pipe could have wasted over 10 million litres of water a year, and generated a bill of over £21,000. Instead we were able to find it, and fix it for free.



What our customers think.

We collect customer feedback across all of our metering work, and we're continually introducing new initiatives to improve our customer service, such as booking appointments online. See what our customers have been saying about having a meter fitted recently:



Reducing what we use.

Encouraging water efficient behaviours and delivering water savings programmes are essential parts of our long term plans to manage water more sustainably. Together with metering and leakage management, we're delivering the UK's largest and most diverse water efficiency programme. Our established programme promotes responsible use of water among our customers, and highlights the benefits of saving water at home and in the workplace. We continue to encourage our customers to save water, energy and money – saving over 11 million litres of water a day during 2017/18, (based on Ofwat's assumed savings).



Installing a water efficient shower head.

We're delivering water efficiency initiatives for households, businesses, schools, local authorities and housing associations. Our customer engagement efforts include home visits, websites, multiple social media platforms, regional campaigns and online calculator tools.

Our programme builds on our successful AMP5 and 6 initiatives, and takes on board recommendations and results obtained from regulators, non-government organisation (NGOs) and customers to help shape our programme. Our plan also aligns to the Water Efficiency Strategy for the UK produced by Waterwise, delivering several of its core actions. Here's how we're aiming to enhance our best practice approach with our AMP7 plan:

- Rolling out wider-scale smarter home and business visits.
- Running high-profile campaigns (for instance, leaky loos) to cut core demand.
- Maximising integration of our water efficiency and smart metering programmes.
- Taking innovative approaches to customer engagement and behaviour change marketing.
- Using large-scale non-financial incentives to reward lower water consumption.
- Communicating water efficiency messages year round, not just in summer.

Helping customers save.

In-home and business retrofits.

Our award winning in-home retrofit initiative combines installing free water saving devices with tailored water saving advice. We offer Smarter Home Visits (SHVs) to all customers with a new smart meter, increasing their awareness of the water they use, and maximising their potential water, energy and money savings.

We delivered over 69,000 SHVs in 2017/18, and installed over 174,000 water and energy saving devices through our activities. These visits saved 5.33 Ml/d of water last year (based on Ofwat's

assumed savings). During these visits we also fix leaky loos and offer selected customers free benefit entitlement checks and debt advice. An average of £2,791 per year has been identified for each family referred for this service, if they were eligible for unclaimed benefits.

We're also increasing our water efficiency efforts with small to medium sized businesses. Through our Smarter Business Visits (SBVs), we're fixing internal leaks, converting WCs to dual-flush and installing urinal controls. We carried out 527 visits in 2017/18, which saved 1.06 Ml/d (based on calculated savings from installed products and fixes). Click on the case studies below to read more:

 [Smarter Home Visits \(0.25MB\)](#)

 [Smarter Business Visits \(0.30MB\)](#)

Long term behaviour change.

In 2017/18, in line with Consumer Council for Water (CCWater) and the UK Water Efficiency Strategy document recommendations, we've really increased our focus on engaging with our customers on the importance of efficient water use, and the bigger picture on water resources. Our water efficiency communications aim to raise awareness of why we all need to save water, and encourage more people to take advantage of our water efficiency programmes and tools.

We've built on our 'Be Water Smart' water efficiency education campaign in Oxford in early 2017, which helped raise awareness of local water issues with the message 'more people, less water to go around'. In 2017/18, we developed this campaign further to highlight 'there's no substitute for water', to help customers really value this precious resource. We've produced a simple animation to help explain the complex issues around supply/demand deficit, and help our customers understand the wider issues and why it's important for us all to be water smart. Watch the video below:



We're improving our website and making it easier to access online tools and find advice on how to save water. Our free online [water and energy calculator](#) helps households identify their water consumption, links this to water and energy costs, and identifies which water saving devices and behaviours they could change to save water, energy and money.

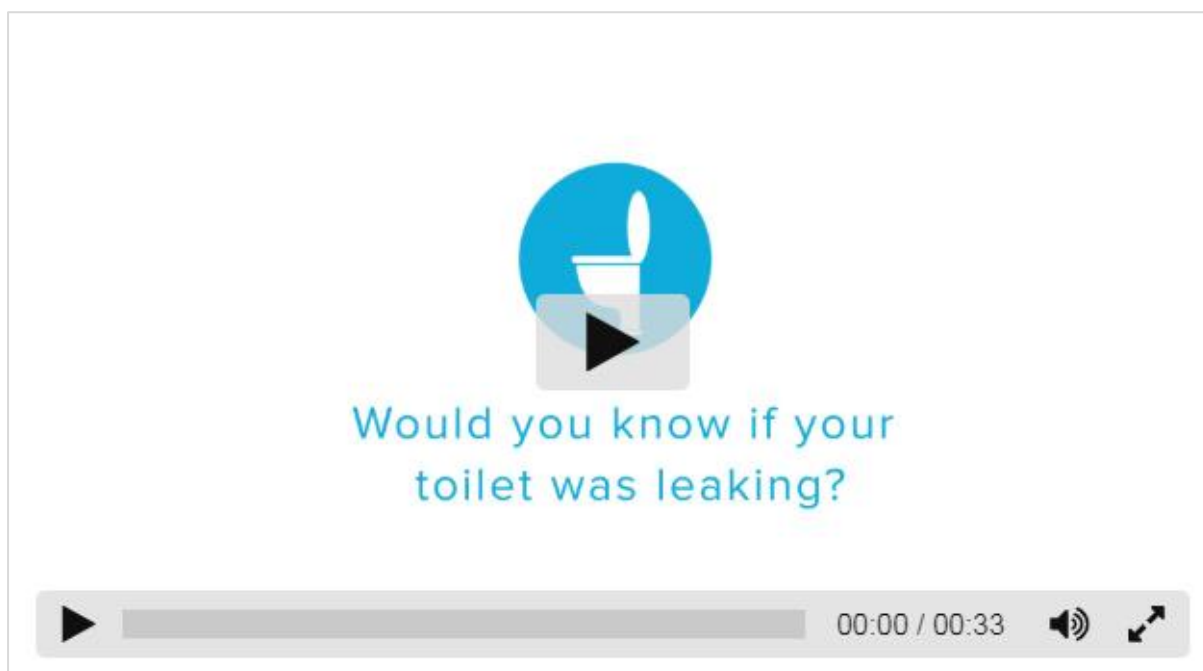
We also offer all of our household customers [free water saving devices](#), which can be ordered online, over the phone and by post. In 2017/18 we launched a new web ordering process making it easier for our customers to find out more about the free devices we offer and quicker to order them. We provided around 40,000 household customers with water saving freebies and are using customer feedback to continually improve our service.

Research and innovation.

Following a collaborative UK water sector research project, and a parallel Thames Water initiative, our focus on internal leakage has continued. Leaky loos are one of the most common causes of high water use, but they often go unnoticed or are just left leaking. Our smart meter data and research shows that leaky loos can lose between 100 and 2,500 litres per day, often more than doubling a metered water bill. We estimate that 5 per cent of households have a constantly leaking loo.

[Leaky loos and internal leaks \(0.28MB\)](#)

We now offer all our customers free leaky loo and tap repairs when we identify a leak during a Smarter Home Visit. In 2017/18 we delivered over 6,000 free internal leak fixes. To increase the public's awareness of wastage losses and the importance of preventing this unnecessary water loss, we have a [dedicated page on leaky loos](#) on our website to give customers more information, complete with a video about how to spot a leaky loo:



We've previously successfully piloted an incentive scheme in Reading to assess the effectiveness of providing customers with non-financial rewards for reducing their water consumption. In 2017/18 we expanded this pilot incentive scheme by offering it to over 140,000 customers with a smart meter in London. Developed in partnership with Green Redeem, a recycling reward specialist, this initiative awards points to customers every time they save water and engage with the web platform. They can use these points on vouchers, entry into prize draws and more. Find out more by clicking on the case study below:

[Water efficiency incentive scheme pilot \(0.28MB\)](#)

Building successful partnerships.

We've continued to develop our partnership with Action for the River Kennet (ARK), raising awareness of the value of water for wildlife and people alike. ARK supports our water saving campaign by offering free 'Water Matters' activities and projects for schools and community groups in the Reading, Newbury and Marlborough areas.

We're working with local authorities and housing associations to promote water efficiency advice to their residents. We provide our free water efficiency devices as part of their own home visit programmes, as well as access to our specialist water and energy saving app. During 2017/18 we

carried out a trial project delivering around 34,500 water and energy saving visits with London and Quadrant (L&Q) to their residents in London. For more details, click on the link below:



[Helping housing association residents save water and energy \(0.36MB\)](#)

Our Water Efficiency Schools Programme is one of the UK's largest schools education programmes for water efficiency, running across 40-80 schools each year. Over 5,000 students have taken part in our schools programme during 2017/18. Learn more by clicking on the case study below:



[Water Efficiency Schools Programme \(0.23MB\)](#)

We're active members of the UK Water Efficiency Network, on steering groups for UK Water Industry Research (UKWIR) projects and the development of a UK Water Efficiency Strategy, and part of Save Water South East (SWSE). SWSE is a two-year partnership between Waterwise, the Environment Agency and six water companies in the south east of England. We've joint funded this partnership to promote and create a water saving culture in the south east. During the year, SWSE continued to build relationships with key stakeholders, run the innovative #Thinkwater campaign, and also set up a second conference with local authorities and housing associations.

Award winning ideas.

Our efforts to improve the quality and increase the quantity of our water efficiency efforts were rewarded in 2017/18. Our bathroom refurbishment research and large scale rollout of water and energy efficient facilities in our main office buildings won the Eco Friendly Toilet of Year Award for England 2017. Our Smarter Home Visits were also shortlisted in the SHIFT Awards 2017 and EDIE Sustainability Leaders Awards 2018.

Developing new water resources.

Even by focussing on making the best use of our resources, this won't be enough to ensure a secure water supply. We also need to develop new sources of water. We have looked at a wide range of options to boost our water supplies from the traditional including developing new reservoirs, transferring water between regions and groundwater abstraction to more innovative options such as desalination and water reuse.



In deciding on what is the best mix of options to take forward we considered cost, environmental and social impacts, resilience to cope with future changes, and any opportunities to deliver wider benefits for society.

Over the next 10 years, we propose a mix of options which include developing of new groundwater sources, transferring water from the Midlands, and a water reuse plant in east London. From the late 2030s we also propose a new reservoir in Oxfordshire.

The reservoir won't just provide water for our customers in London and the Thames Valley, but could also supply water for the wider south east region, by storing it during times of surplus, releasing it back into the River Thames and transferring it across the region. As well as being the most cost-effective option, the reservoir would also offer other benefits, including:

- Enhancing regional resilience and connectivity.
- Facilitating economic development.
- Providing improvements in biodiversity and a regional recreational resource.
- Supporting our long-term aspiration to cease abstractions from vulnerable chalk streams.

In the longer term, if demand for water increases and climate change further reduces the amount of water we can take from the environment, the new reservoir could also help to transfer water from other areas of the country, acting as a regional strategic storage and transfer hub.

There's recently been a lot of focus, in the water industry and more widely, on building a regional or national water network, and using this to transfer water. We've looked at transferring water from Wales, the Midlands and North West, and concluded that these options would be more costly than the reservoir, with additional technical issues that require further work. However, we'll continue to study the idea of transferring water, in collaboration with other water companies. We're confident that our plan is robust and well-balanced, but we operate in a changing world, so we know that our plan won't remain static. We'll review our plan every 5 years, to ensure it continues to reflect the evolving needs of our customers and the environment.

Water Resources Management Plan.

Every five years we produce a Water Resources Management Plan (WRMP) setting out how we will maintain a sustainable balance between water supplies and demand over the next 25 years, as a minimum. In February 2018 we published our draft plan (WRMP19), which sets out how we plan to provide a secure and sustainable supply of water for our customers over the next 80 years, from 2020 to 2100.

We ran a public consultation from 9 February to 29 April 2018 to get feedback on our draft plan. We published a report on 3 October 2018 setting out the comments we received and explaining how we've taken these into account, as well as new information, in revising our draft plan. We are holding a further consultation on the changes made to our draft plan for eight weeks, from 3 October to 28 November 2018. The report on the consultation and the revised draft plan has been sent to the Secretary of State for the Environment, Food and Rural Affairs (Defra), to everyone who participated in the consultation and published on our website [here](#).

> Ensuring responsible operations.

> Supporting the UN SDGs.

> Delivering our streetworks.

> Managing our odour.

Ensuring responsible operations.

For us, operating responsibly means engaging positively with our customers and communities and being good neighbours. It also includes supporting the United Nations Sustainable Development Goals and contributing to making the world a more sustainable place by 2030.



In this section of the report, we describe how we are supporting the aspirations of the United Nations Sustainable Development Goals (SDGs) which have been developed to make the world more sustainable by 2030 in challenges as diverse as ending poverty to tackling climate change. We've decided to focus on four specific Sustainable Development Goals and we demonstrate how we think we can make a real contribution related to our expertise and main area of operation.

We also highlight how we've continued to reduce the impact on our customers and communities from our streetworks and our treatment sites - including reducing the number of households affected by odours that can occasionally arise at our sewage treatment works.

We're aware of the disruption our streetworks can sometimes have on communities, commuters and local businesses. You can read more about how we're pioneering a pilot scheme called 'ThamesConnect' for utility companies to share and evaluate project planning data so that they can better plan and coordinate their streetworks, and identify opportunities where working together may be possible in the future. We hope to coordinate with other utilities, plan better, save on resources but most crucially of all, limit the impact on our customers whenever we can.

Supporting the United Nations Sustainable Development Goals.

The United Nations Sustainable Development Goals have been developed to make the world more sustainable by 2030 by addressing challenges as diverse as ending poverty to tackling climate change. Thames Water supports the aspirations of the United Nations Sustainable Development Goals (SDGs).

The SDGs can only be achieved if governments, businesses, civil society and citizens work together. The United Nations has produced 17 SDGs and 169 targets that describe the road map of ambitions to build a more sustainable future by 2030. The challenge for us at Thames Water is this: how can we help to achieve these goals?



We've decided to focus on four specific SDGs where we think we can make a real contribution as a result of our expertise and main area of operation - delivering water and sanitation to around 25 per cent of the population of England and Wales.

The four SDGs that we can positively contribute towards are:

Clean Water and Sanitation - We provide safe water and sanitation to 15 million customers 24/7/365. Every day we supply over 2.7 billion litres of safe clean drinking water, and treat around 4.4 billion litres of sewage. Outside the UK, we're working with WaterAid to help deliver its vision of a world where everyone, everywhere, has access to safe water and sanitation. In 2017/18, our employees raised £316,675 for WaterAid, a charity we've supported for 30 years. This money will be used as part of our four year 'Thames loves Malawi' campaign which aims to build partnerships and empower people in Malawi, particularly local council officers and water board employees, to make a sustainable change in two towns which had no access to clean water.

Affordable and Clean Energy - We're working to increase the amount of renewable energy we generate, helping to increasing the share of renewable energy in the UK and global mix. In 2017/18 we generated 293 GWh of our own electricity needs from renewable sources including biogas, wind power and solar panels – enough renewable electricity to power over 94,000 homes.

Responsible Consumption and Production - We're working to become more efficient, reduce waste and increase how much we recycle and re-use. Last year, 100 per cent of sewage sludge that wasn't incinerated to generate renewable energy was put to beneficial use, with 98.7 per cent applied to agricultural land as fertiliser and 1.3 per cent used in land restoration or reclamation. We also generated 286 GWh of renewable electricity from safely treating sewage sludge.

Climate Action - We're working to increase our capacity to respond to the impacts of climate change and mitigate our contribution to its causes. We've assessed the potential impact on our ability to provide our customers with water and wastewater services, and published a report of our findings and our plans to respond. As part of this, we've installed Europe's largest floating solar panel array at our Queen Elizabeth II reservoir, generating enough electricity to power 1,700 homes.

Supporting the SDGs isn't an extra task for our business – it's simply part of what we do every day.

Delivering our streetworks.

With more than 109,000km of sewers and 31,000km of water pipes under the streets, we have an extensive network of pipes and equipment to look after across London and the Thames Valley.



Our streetworks falls into two categories:

1. Proactive investment to upgrade and replace pipes and sewers
2. Repair work in response to problems that occur without warning

Last year we raised 3,710 streetworks notices, of which 3,554 were for planned works and 156 were for emergency repairs. We're committed to a programme of upgrading our networks and reacting quickly to fix our pipes – whether that's a blockage in a sewer, or a burst or leaking water main.

Considerate ways of working.

We're passionate about reducing the impact our work can have on our customers across our region. We often share work sites and traffic control with other partners to make sure we all minimise our effects on the local area, and we're committed to building good working relationships with Transport for London, local authorities and other stakeholders who are affected by our work.

We know that our essential roadworks can be disruptive to customers' daily lives, especially when a road reopens only to quickly close again for a different company to start work. That's why we're pioneering a pilot scheme called 'ThamesConnect' for utility companies share and evaluate project planning data so that they can better plan and coordinate their streetworks, and identify future opportunities where working together may be possible.

We've been trialling this scheme in the London Borough of Croydon, following a successful water mains replacement in Camden in 2016 where we managed to reduce the duration of roadworks by four months, thanks to working alongside other utilities and the local authority. With 'ThamesConnect' we hope to coordinate with other utilities, plan better, save on resources but most crucially of all, limit the impact on our customers where possible. Click on the case study below to find out more:



[Reducing disruption through collaborative working \(0.41MB\)](#)

We've also been using a cutting edge technique to replace some of our oldest pipes. This involves using a powerful pipe pushing machine imported from Holland to insert stronger plastic pipes inside the existing cast iron water mains, significantly reducing the time and disruption it traditionally takes to replace and strengthen old Victorian pipes.

Watch the video below to see our pipe pushing machine in action as part of our mains replacement scheme in New Malden, and click on the case study to find out more:



Managing our odour.

Our sewage treatment works and pumping stations can sometimes produce odours, and we want to reduce the chance of these unwelcome smells disrupting the communities where we operate. We've made a commitment to our regulator, Ofwat, that we'll reduce the number of people's homes and workplaces affected by odour by 6,593 by 2020.



An odour control unit at Deephams sewage treatment works.

What's the problem?

When many of our operational sites were built, they were normally located well away from residential areas. But with continued population growth in the south east, housing developments are now getting closer to our sewage treatment works.

Many of our sites are over 40 years old, and they weren't designed and built to minimise odour. Unfortunately this means that no matter how well we manage and operate our sites, some people's homes can still be affected by unwelcome smells.

We're continuing to upgrade our sites to reduce odour for local communities, with current projects at sites like Deephams. Our targeted approach of focusing improvements on particular parts of our sewage treatment works (for instance, by installing better odour control units for covered wastewater and sludge processes, as shown in the image above) helps make sure we're installing tailored solutions as efficiently as possible. Click on the case study below to find out more on our upgrades at our storm tanks in Acton:



[Being a good neighbour in Acton \(0.38MB\)](#)

How are we doing?

After our investments to upgrade our sewage treatment works, we've exceeded our target for odour reduction by 12 per cent. Our success in cutting unwanted smells is improving, thanks to introducing odour management plans, installing new odour abatement equipment, and carefully tracking our results. Completing a number of major odour mitigation projects means we're on target to meet our performance commitment to Ofwat. Here's how we've achieved this:

1. Carefully maintaining equipment that affects how much odour our sites produce, and ensuring that our day to day operations minimise unwanted smells. This includes undertaking maintenance and improvements at treatment works and pumping stations as part of how we meet all the current practices for controlling odour.
2. Investing in reducing emissions at Deephams, and other sewage treatment works close to people's homes and workplaces.
3. Making sure that any new development on our sites won't have a detrimental effect on the community.
4. Adding odour reducing compounds to sewage in our drains to help reduce the odour of waste arriving at our works.
5. Trialling real time odour monitoring technologies to provide improved proactive control.
6. Investigating innovative, low energy and low carbon ways of treating unwelcome smells.

Sewage works upgrades.

We're continuing to improve our sewage treatment work performance. In 2017/18, we made more improvements to reduce unwanted smells at Farnham sewage treatment works, by installing and replacing odour control units, and improving our storm tank cleaning systems. According to our odour management models, this means that 682 fewer homes and businesses will be affected by odours.

> Addressing climate change.

> How we're adapting.

> Mitigating climate change. 

- > Reducing our greenhouse gas emissions.
-

> Working with others.

Addressing climate change.

The projected impacts of climate change across London and the Thames Valley will compound a difficult situation in which our water resources are already stressed and the population is increasing. We believe that a twin track approach of managing the unavoidable impacts of climate change on our business ('adaptation'), combined with reducing our greenhouse gas emissions ('mitigation'), is essential if we are to manage the challenges that climate change represents.



In this section of the report, we describe our response to the impacts and causes of climate change and how it needs to be positive and equitable, contributing to our wider aspiration of becoming a more sustainable business. We can't do this alone, and we rely on delivering better outcomes in partnership with customers, stakeholders, alliances, suppliers and regulators. We know we must continue to find solutions that balance competing environmental, social and economic demands in a more sustainable way.

Climate change is a central theme of our five-year Business Plan from 2015-20, which outlines how we aim to reduce our contribution to greenhouse gas emissions and adapt to its effects. Our approach to climate change is also reflected in the policies below:

[Climate Change Policy 2018 \(0.30MB\)](#)

[Sustainability Policy 2018 \(0.29MB\)](#)

[Environment Policy 2018 \(0.27MB\)](#)

How we're adapting.

Our business is sensitive to weather and we have to deal with whatever weather happens on a daily basis. This includes the impacts of severe weather, which are real, and can be seen almost every week. As a result, we're concerned about the future impact of weather and climate change on our business, and what they mean for our customer service.



The impacts of climate change may often seem a long way off, but in simple terms they're just a long term shift in the frequency and intensity of extreme weather. Over the past few years alone, there have been several extreme weather events which have all significantly affected our ability to deliver our service to our customers, including:

- Late February and early March 2018 – 'The Beast from the East'
- October 2016 to March 2017 - the driest period since 1995/96
- In 2014 - the wettest English winter since 1766
- The floods of 2013/14
- In 2012 - the wettest summer for 100 years
- Drought in 2010/12

Since 2010 we've put a lot of effort into improving our understanding of how climate change could affect our ability to deliver our services to our customers. We published a detailed review of the potential impacts in 2015/16 which indicated that our key issues are still broadly associated with either too much or too little water. This challenge is reflected in the performance commitments (agreed with our regulator Ofwat) included in our current business planning period which ends in 2020, which you can see in the table below:

Performance and commitment code	Performance commitment	Amount of customer service with additional flood resilience	Performance	2020 target
WB8	Increase flooding resilience of water service – we will improve our ability to continue to supply customers with clean water during flooding events	Megalitres per day	4	1,015
WC2	Reduce leakage	Megalitres per day	695	606
SB7	Increase flooding resilience of wastewater service – we will improve our ability to continue to transport and treat wastewater during flooding events	Population equivalent	537,700	1,700,000
SB5	Hectares disconnected from mains drainage (twenty4twenty)	No. Hectares	0	20

We're working hard to protect our sites from flooding. All our residual work has moved into delivery phase from April 2018 and the forecasts for 2018/19 and 2019/20 are in line with our delivery programme.

The way we've set out our work, with the majority planned for year 4, means that there's enough time for delivery of the scope and any further remedial actions if necessary to be delivered by the end of AMP. We've delivered schemes at two wastewater sites this year, Maple Lodge and Chesham, which cover 537,700 population equivalents between them, so that they now have a flood resilience standard of a 1 in 200 year event.

Our approach has evolved over time - from one mainly focused on modelled projections of possible futures, such as the UKCP09 projections, to one which also tries to understand the potential impacts of weather and climate change on our activities and challenges our assumptions about climate change and risk.

In 2016 we produced a short report and a number of illustrative case studies which describe our progress in responding to climate change between 2010 and 2015. Click [here to read the report and case studies](#). We'll update on our progress in 2020.

Mitigating climate change.

We're committed to reducing our contribution to climate change, and we aim to reduce our greenhouse gas emissions in support of the Climate Change Act 2008. Compared to 1990 levels of 845.8 kTCO₂e, we've achieved a 27 per cent reduction in our gross emissions*. When the purchase of renewable grid electricity is taken into account, the net reduction in our greenhouse gas emissions emission was 67 per cent compared to 1990 levels*#. This reduction is against a backdrop of serving around 3 million more customers. 2017/18 was the first full year of using renewable grid electricity.



Thermal Hydrolysis Plant (THP) at Riverside sewage treatment works.

	2016/17	2017/18
Gross emissions*	705.9kt CO ₂ e	617.3kt CO ₂ e
Net emissions *#	498.0kt CO ₂ e	277.9kt CO ₂ e

Different types of emissions.

There are two distinct categories of greenhouse gas (GHG) emissions which affect our business the most:

1. **GHG emissions associated with the operation of our assets** - these are under our control, so we're taking action to reduce them by becoming more energy efficient, using less energy, enhancing our understanding of fugitive emissions and making our own renewable electricity.
2. **GHG emissions associated with the use of electricity taken from the national grid** - we can directly affect the volume of electricity we consume, but overall de-carbonisation of grid electricity is achieved through government policy.

To sustain and improve on our 67 per cent reduction, we need to continue find ways to use less energy by being more efficient, making more of our own renewable energy, and continuing to invest in low carbon operational processes and assets.

Our renewable energy use.

Generating our own renewable energy helps mitigate against climate change and the amount of energy our operations need to use because of population growth and higher wastewater treatment standards.

In 2017/18, we produced 22.2 per cent (293GWh) of our own electricity needs from renewable sources including sludge treatment, wind and solar power. This reduces our greenhouse gas emissions and is the equivalent of £30 million a year in energy savings. We also produce and use renewable heat, which increased last year by 4 percent to 124.3GWh in 2017/18. When renewable heat is combined with our renewable electricity generation, we're expecting our total generation of renewable energy to exceed 500 GWh by 2020.

We're on track to deliver the 35 per cent reduction we've planned for our net amount of electricity we import from the grid by 2020. Despite this good progress, however, we don't think we'll reach our absolute target of 771 GWh, mainly due to starting from a higher level of usage at the beginning of this AMP than we expected.

When we're not able to generate our own renewable electricity, we began sourcing renewable grid electricity[#] in October 2016. Last year 100 per cent of the grid electricity we consumed came from renewable sources. This contributed to significant reductions in greenhouse gases from both our water (69 per cent) and wastewater operations (33 per cent). When combined with our renewable self-generation, this means 100 per cent of the net electricity we consume is from renewable sources.

**Scope 1 emissions refer to greenhouse gas emissions associated with the operation of our assets. Scope 2 emissions are emissions associated with the use of grid electricity.*

#From October 2016 our net operational emissions account for the grid electricity we imported being 100% REGO accredited renewable. We use the government's REGO (renewable energy guarantee of origin) accreditation scheme to demonstrate that the electricity we consume is from a renewable source.

Reducing our greenhouse gas emissions.

We've committed to making significant reductions to both our operational carbon footprint and our energy consumption, to help us become more sustainable and make sure we deliver for our customers. Our total net operational emissions, including outsourced activity, reduced by 230.1 kTCO_{2e} to 277.3 kTCO_{2e}[#] (507.4 kTCO_{2e} in 2016/17).



The table below provides the relative intensity of emissions involved in delivering both our water and wastewater services to our customers:

Service area	kgCO _{2e} *		
	2015/16	2016/17 [#]	2017/18 [#]
Operational GHG emissions per MI of treated water	273.0	141.2	24.6
Operational GHG emissions per MI of waste water treated	303.1	225.4	135.3

In the penultimate year of this current AMP period, we're also starting to explore options for developing our future carbon reduction targets beyond our current 34 per cent reduction on 1990 levels by 2020. These may include setting more broad objectives around increasing renewable electricity generation, not only from sludge but also other sources such as solar photovoltaics (PV). We'll also look to broaden our energy targets to include heat as well as electricity.

**Scope 1 emissions refer to greenhouse gas emissions associated with the operation of our assets. Scope 2 emissions are emissions associated with the use of grid electricity.*

[#]From October 2016 our net operational emissions account for the grid electricity we imported being 100% REGO accredited renewable. We use the government's REGO (renewable energy guarantee of origin) accreditation scheme to demonstrate that the electricity we consume is from a renewable source.

During 2017/18 we generated and used 293GWh of renewable electricity, most of which (286GWh) came from the treatment of sludge - our best ever performance. This is set to increase as we expand our use of THP and the addition of our new Advanced Energy Recovery process. Increasing the amount of renewable energy we generate from sludge is helping to reduce our carbon emissions, reduce our reliance on grid electricity and make even better use of a valuable resource. Click on the case study below to find out more:



[How we manage carbon emissions and sludge \(0.35MB\)](#)

Whilst our current green tariff electricity supply and generation of renewable electricity reduces the impact of carbon emissions associated with the use of electricity, we still need to reduce our consumption of electricity to help reduce costs and impacts on customer bills. This is an ongoing focus for the business which requires a range of approaches to achieve the best results. Click on the case study below to find out more:



[Becoming a more energy aware business \(0.35MB\)](#)

Looking forward.

We'll continue to actively engage with our employees on our three clear and simple energy themes:

1. Using less energy.
2. Paying less for energy.
3. Make more of our own renewable energy.

These three themes – 'use less, pay less, make more' - are integrated with our long term investment plans, applying them across the business and integrating them into the delivery of our current and future investments. This will also help us to reduce our greenhouse gas emissions.

Working with others.

Our employees and alliance partners play an essential role in our journey to becoming more sustainable. We want to make it easy for our teams to make more sustainable choices in how we respond to the challenges of tackling climate change.

An important part of this is the need to work with other organisations to develop resilient responses to the impacts of climate change, and to reduce our greenhouse gas (GHG) emissions. We know we can't do this alone, so we're continuing to work collaboratively with our customers, employees, partners, suppliers and regulators to create opportunities to better understand what we can do.

Our thought leadership.

During 2017/18 we've carried on working closely with a range of other organisations to tackle the issue of climate change and lead debate. Some of these partners have been:

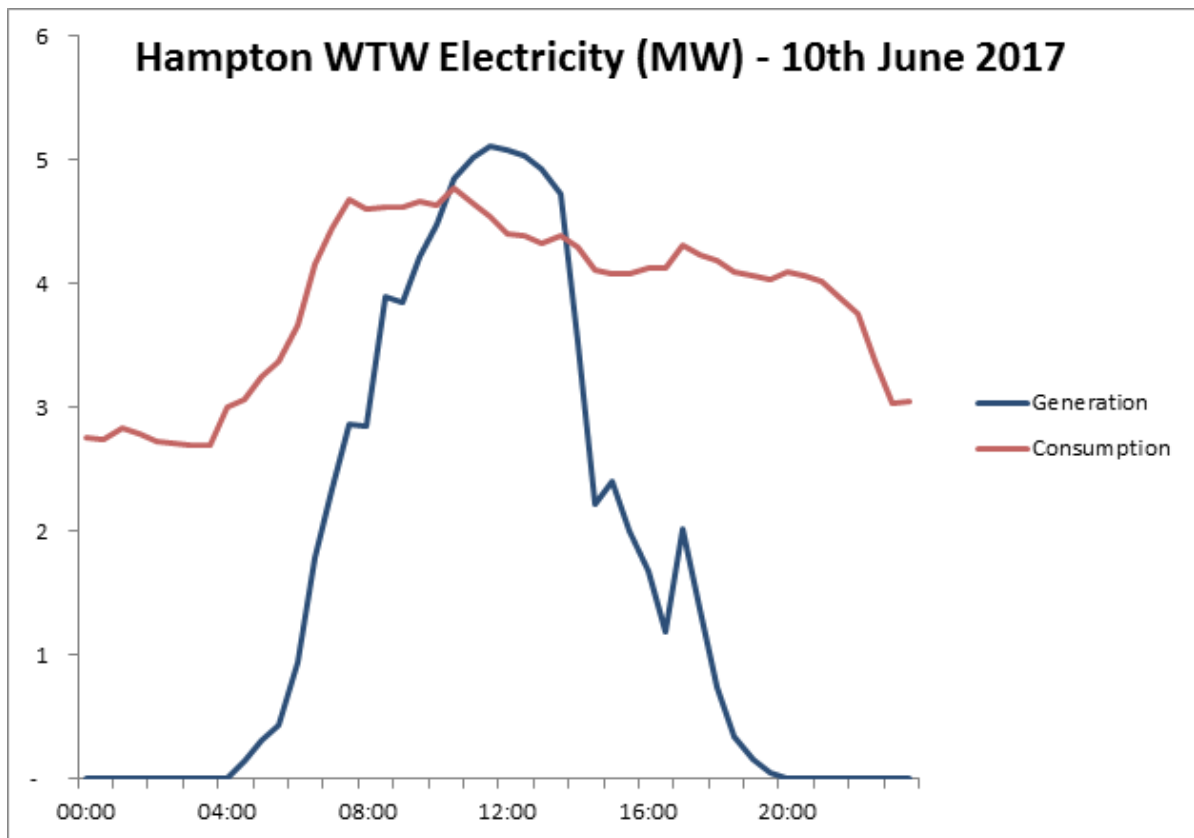
- The Aldersgate Group.
- The Prince of Wales Corporate Leaders Group on Climate Change.
- Business in the Community.
- The Thames Water Customer Challenge Group.
- Defra.
- London Climate Change Partnership.
- The Climate Change Committee's adaptation sub-committee.
- Action for the River Kennet (ARK).
- WaterUK.
- UKWIR.
- BEIS.
- Haven Power.
- A range of academic institutions including the University of Oxford and Imperial College.

Delivering increased resilience.

We've challenged our alliance partners to help us become more resilient and minimise both the operational and embodied carbon impacts of all their programmes. We've made progress towards our ambitious goal of reducing our GHG emissions to 34 per cent by 2020.

We've reduced our gross greenhouse gas emissions by 27% down to 616,731 kTCO₂e compared to 1990 levels despite having around 3 million more customers. Our net greenhouse gas emissions have reduced by 67% to 277,328 kTCO₂e#. We generated 293GWh of the electricity we used from renewable sources equivalent to a £30 million energy cost saving. Despite this, we weren't able to meet our target of reducing our grid electricity consumption, which increased by 140 GWh during the year. This increase was mainly due to increased service demand.

After we installed Europe's largest floating solar panel array on our Queen Elizabeth II (QE2) reservoir, it's been providing renewable electricity to our Hampton Water Treatment Works. Last year the QE2 array supplied a total of 14% of Hampton's electricity needs, peaking on sunny days when demand for Hampton's water was highest. At its peak output it supplied 44% of the site's daily needs, and 100% of the site's needs for 3.5 hours a day.



#From October 2016 our net operational emissions account for the grid electricity we imported being 100% REGO accredited renewable. We use the governments REGO (renewable energy guarantee of origin) accreditation scheme to demonstrate the electricity we consume is from a renewable source.

- Delivering efficient operations.

- Our supply community.

- Sludge as a resource. -
 - Energy from sludge.
 - Sludge to land.

- Our capital investment.

Delivering efficient operations.

We aim to run our business as efficiently as possible. So we're always trying to reduce our use of natural resources, minimise waste and deliver efficient and effective operations for both today and in the future.



In this section of the report, read about how we're building a diverse supply community which harnesses the power of alliances, recognises the value of small to medium-sized enterprises (SMEs) and embraces fast moving agile organisations and, how together, we'll unlock mutual benefits and create value through investing, developing and disrupting. Collaboration is at the heart of our Thames family, with all our supply chain activities following the same values and coordinated in their efforts. This includes promoting a culture of safety and wellbeing, sharing resources and capability, and developing innovative and sustainable solutions.

We demonstrate how we're committed to reducing our reliance on natural resources and providing a more sustainable service in the long term. For instance, in 2017/18, we generated 293GWh of our own electricity consumption from renewable sources, including sludge treatment, wind and solar power - allowing us to reduce our reliance on importing non-renewable electricity from the grid.

We also highlight how we aim to maintain our existing assets and develop any major new infrastructure more sustainably and build them in line with our nine sustainability themes. For our delivery partners, eight2O, this means using sustainability as an efficiency driver.

Our supply community.

How we buy products, and who we buy them from, can have a significant impact on the efficiency of our operations. Through our supply chain we seek to reduce our use of unsustainable resources, minimise waste and deliver efficient and effective operations, both today and in the future. Our aim is to develop a resilient supply community, where suppliers are treated fairly, and everyone operates with a shared set of goals, visions and values, to deliver real benefits to our customers and help us become a more sustainable business.



Last year our commercial team managed Thames Water's annual spend of £1.75 billion at the same time as working hard to make our supply community a more efficient and mutually beneficial place to do business. We've invested in tools and technology to make transacting with us easier, and we're transforming the way we communicate with our supply community.

Our supply chain digital platform includes a demand planning tool, spend analytics and an updated procurement methodology. Together with our supplier engagement plan, this allows us to:

- Plan ahead with robust forecasting to enable a resilient supply chain and certainty of service delivery for customers.
- Use data insights to make sure our contracts run smoothly, and deliver benefits for our customers and stakeholders.
- Share our challenges and customer priorities to align our goals and develop initiatives together.
- Engage with the supply market earlier to enable efficiencies and provide the best possible value for customers, keeping their bills affordable.

Finding the right partners.

We recognise we don't have the answers to all our challenges, and that's why it's so important to attract and retain the best supply partners to help us. We look for those who share our core values, including our zero compromise approach to health and safety. We want to work with those who are interested in a long term strategic relationship, and those who can offer goods and/or services which best meet the needs of our business, while delivering great value for our customers. Our supply agreements are reached following a competitive, fair and transparent process.

We engage the services of Achilles Group Ltd to assess the health and safety capabilities of bidders and their subcontractors. It's a requirement of our procurement process that bidders have undertaken

an Achilles Verify health and safety audit, and have achieved and hold a minimum score of 80 per cent in each of the relevant desk based and site based (if appropriate) health and safety audits after the contract has been awarded. Throughout the lifetime of a framework agreement, we run monthly checks on the validity of any suppliers who are working on our sites to check that there are no audit failures and that they are all still current.

We also run a passport scheme as a visible means of confirming that everyone working for or on behalf of us have been provided with consistent information on risk, and understands the importance of working safely. As part of our zero compromise culture, all personnel working with or for us must hold the Thames Water Passport in order to work on our sites or assets.

As part of our sourcing process, we ask potential suppliers for information on their approach to environment and sustainability. We also ask for information on how they use subcontractors, and measures in place to effectively manage their supply chain.

Find out more by clicking on the link below:



[Bringing skills into our industry \(0.31MB\)](#)

Our payment terms.

When setting up payment terms, we take into consideration the size and situation of our suppliers, particularly our small to medium-sized enterprises. Where possible, we try to remain flexible and consider each supplier on a case-by-case basis and when it's justified, we're able to reduce the payment terms.

In 2017/18 we paid £2.1 billion for goods and services received from our suppliers. Of these suppliers, we paid 90.9 per cent of all our invoices, totalling more than 140,000, in line with our agreed payment terms. Three years ago we increased our payment target to 90 per cent, and since then we've achieved it every year.

Honest and Ethical behaviour.

After we award a contract to a supplier, they're obliged to meet the requirements of our Honest and Ethical Behaviour Policy. We remain fully committed to ensuring that there is no slavery or human trafficking in our supply chain, or in any part of our business. Our position on preventing modern slavery in our business is contained within our Honest and Ethical Behaviour Policy. It reflects our commitment to acting ethically and with integrity in all our business relationships, and to implementing and enforcing effective systems and controls to ensure slavery and human trafficking are not taking place anywhere within our business or supply chain. This and our Modern Slavery statement can be found [here](#).

Sludge as a resource.

Sewage sludge is the essential solid by-product of the wastewater treatment process, but it's a valuable resource too. We treat sludge safely, and recycle it to land sustainably. We recycled 98.7 per cent of biosolids to agricultural land in 2017/18. We also use sludge to generate renewable electricity and reduce our reliance on energy imported from the grid. In 2017/18, we increased our renewable electricity generation from sludge by 11 per cent compared to the previous year.



Sludge cake storage at Long Reach sewage treatment works.

Our sludge strategy.

Our 25-year sludge strategy continues to provide the framework for our sludge investment proposals, which include:

- Ensuring safe and sustainable recycling – to give confidence to farmers and food producers, but also to reduce our reliance on agricultural land by using other forms of treatment and energy generation.
- Increasingly adopting treatment processes that will maximise the generation of renewable energy and minimise the volume of sludge produced.

Responsible sludge management.

Producing, treating, recycling, reusing and disposing of sewage sludge is controlled by comprehensive legislation. We maintained 100 per cent compliance with this in 2017/18.

We transport and treat 4.4 billion litres of sewage every day, and last year we produced more than 366,200 dry tonnes of sludge. We treated approximately 93.5 per cent of this sludge using anaerobic digestion or incineration. This allowed us to increase our renewable energy generation by 11 per cent compared to previous years. This also helps to reduce the volume of biosolids (treated sludge) which we take to agricultural land for recycling – an essential part of our strategy to become more sustainable.

We have recently transformed the way we manage sludge by implementing more efficient sludge inventory management and transport logistics between treatment sites. Click on the case study below to find out more:



[Flush to field - better management of sludge \(0.67MB\)](#)

Energy from sludge.

Sewage sludge is an energy rich resource, with a high calorific content which we extract as biogas and use to generate electricity. We've been producing renewable energy at our larger sewage works since the 1930s. By investing in our infrastructure and using a combination of methods and new technologies, we've been able to increase the amount of renewable energy produced from sludge.



In 2017/18, we generated 245 GWh of our own electricity needs by using biogas as a fuel recovered from sewage sludge treatment to feed generators to produce renewable electricity from combined heat and power (CHP) engines. We produced a further 41 GWh by burning sludge as a fuel, so in total we generated 286 GWh of our own electricity needs from sludge.

As well as reducing our greenhouse gas emissions and our reliance on buying non-renewable energy from the grid, generating our own electricity helps us improve the quality of the sludge we recycle to agricultural land. This saves money and provides a more sustainable solution for our customers.

We're continuing to look for ways to increase our renewable energy generation from sludge. Click on the case study below to find out more:



[Managing sludge with Advanced Energy Recovery \(0.36MB\)](#)

Sludge to land.

We're committed to the beneficial use of sludge wherever possible. In 2017/18, we recycled 98.7 per cent of our treated sludge (biosolids) to agricultural land as a natural fertiliser. This provides essential nutrients and organic matter to the soil. The remainder was used in land restoration projects as a bulk soil improver to help restore industrial land for future regeneration. Incineration ash is put to beneficial use where possible, or sent to landfill as a last resort.



Sustainable agricultural use.

The Government and EU recognise recycling sludge to agricultural land as the best practical environmental option in most circumstances. We comply with stringent requirements to assure the quality and safety of our biosolids and their safe use in agriculture. This includes the 'Safe Sludge Matrix', an agreement between water companies and the British Retail Consortium, which sets out guidance for the application of biosolids to crops and strict controls on the quality of sludge.

We've achieved certification of our treated sludge under the Biosolids Assurance Scheme, a standard which all sewerage companies in the UK have adopted to ensure all biosolids meet a minimum standard quality. ThamesGrow is a leading range of biosolid products produced by Thames Water for use in agriculture. This provides a more sustainable, cost effective and environmentally sensitive solution for farmers throughout the south east. For more information on ThamesGrow [click here](#).

Our capital investment.

We're working closely with our partners in eight₂O (our major capital delivery alliance) to change the way our assets are improved and managed. We're focused on delivering our commitments to customers, in ways that are lower carbon, more resilient and which benefit local communities and the environment.



Delivering innovation and efficiency.

Delivering more sustainable solutions for our customers requires us and our alliance partners to be innovative and think differently about projects. From design through to commissioning, we challenge ourselves on every project to consider our customers and improve performance against our sustainability themes. There are many ongoing projects to improve and maintain assets, to ensure we supply high quality water to our customers, and avoid any negative impact on the environment.

We've delivered a number of notable projects over the past year:

- We replaced an old iron Victorian water pipe with a new tougher plastic one in Baker Street as part of a £2.1 million project to make the network more resilient now and for future generations. The new plastic pipe was inserted inside the old cast iron pipe, a process called slip-lining, which is the quickest, most efficient and less disruptive way of upgrading the pipe. This process eliminates the need to dig long trenches to replace the pipe completely and close entire roads for long periods of time.
- We installed a new and innovative supporting structure and lining for a sewer above Baker Street underground station to avoid major disruption to traffic, people and the underground train network. A novel system of steel frame and lining panels have been inserted through manholes and assembled in situ to strengthen and line the Kings Scholar Pond Sewer from the inside, avoiding the need for large-scale engineering works. For more information, see our case study below.
- We're installing sustainable drainage systems at three locations in the London Borough of Hammersmith and Fulham as part of the LIFE+ climate proofing social housing landscapes project. This will reduce the amount of rainwater entering the sewers, increase resilience to flooding, and improve public amenity and biodiversity at the sites. The project is being delivered in partnership with an environmental charity, Groundwork, that works in disadvantaged communities in London.

- We've been constructing thermal hydrolysis plants (THPs) as part of our THP expansion project. The addition of THP to current sludge treatment processes enables more biogas to be produced from sludge, which can then be used as a fuel to generate renewable electricity. This will further reduce our reliance on grid energy, as well as cutting our carbon emissions. Sludge treated by THP also provides a more useful product for farms, so there are more sites which are willing to accept THP sludge, and the product is less odorous than limed sludge.
- We're constructing a pilot scheme that will take the residual sludge from anaerobic digesters and generate additional energy through an advanced thermal process, called pyrolysis. If it's successful, we may introduce this technology at a larger scale at other wastewater treatment sites. Read more in the case study below.



[Stabilising the sewer above Baker Street underground station \(0.38MB\)](#)



[Managing sludge with Advanced Energy Recovery \(0.36MB\)](#)

Reducing our impacts.

We always attempt to implement more sustainable solutions where possible, and try to minimise environmental impacts in the planning and construction of all our projects. We do this by challenging all our design teams to use innovative methods and materials to deliver their projects successfully. These working practices include:

- Improving resilience of our sites and minimising waste - at Coppermills water treatment works we have improved the reliability of drinking water supply to London, while minimising the carbon and health and safety impacts of the project by using innovative offsite manufacture. We also used a mobile recycling unit to process excavated material and reuse it as aggregate where possible, instead of producing and transporting new material. The recycling unit is also proving crucial in our ongoing mains rehabilitation programme to repair and restore water mains. For more information, see our case study below.
- Creating and surveying habitats and enhancing biodiversity - at Lockwood reservoir, which forms part of the public Walthamstow Wetlands Site of Special Scientific Interest (SSSI) and Special Protection Area (SPA), we used innovative soft engineering techniques and an environmentally sensitive design to improve and prevent erosion of the reservoir embankment. We also used non-invasive methods to survey wildlife at the reservoir before and after the project by using unmanned aerial vehicles (UAVs), also known as drones. This was carried out in collaboration with Natural England, Walthamstow Wetlands Trust, Waltham Forest Council and the fisheries, who also aim to do this on future projects. For more information, see our case study below.
- Minimising operational carbon emissions in the course of projects which aim to reduce phosphorus at our wastewater treatment plants, using ferric sulphate instead of ferric chloride. Although they both reduce phosphorus in treated wastewater, ferric sulphate reduces carbon emissions by more than 50 per cent.



[Using recycled aggregate \(0.23MB\)](#)



[Protecting the environment at Lockwood Reservoir \(0.40MB\)](#)

A look ahead.

We're working with our design and construction partners to make operational and embodied carbon reduction, sustainability and environmental enhancement 'business as usual' across all our projects. To do this, we set ourselves a number of targets last year, and we'll carry on working with our teams to meet and outperform these targets.

We'll continue to work towards meeting our targets, to provide water efficiently and keep our communities safe. At the same time, we're doing everything we can to make sure there's no damage to the environment, or loss of biodiversity, across our programme of improvements.

> Providing sustainable drainage.

> Sewer flooding incidents. —

> Preventing sewer flooding.

> Pollution prevention activities. —

> Tackling misconnected drains.

> Surface water management.

> Sustainable sewage treatment.

Providing sustainable drainage.

We collect and treat sewage from our 15 million customers, using our sewer network to transport it to one of our 351 sewage treatment works. Wherever possible the solid elements of sewage (what we call sludge) are used to produce renewable energy, while the accompanying water is treated to a high standard and recycled safely to rivers and streams.



In this section of the report, read about how we're continuing to work hard to make sure our sewerage network and sewage treatment sites are as resilient as possible - to protect our customers, communities and the environment from potential sewer flooding or pollution.

We highlight how we're proactively maintaining and enhancing our sewer network to reduce the risk of sewer flooding and pollutions, including: installing sewer alarms; regularly cleaning, monitoring and repairing our network; raising awareness of misconnected drains; and communicating and engaging with customers about sewer abuse. Our 'Bin it, don't block it' campaign highlights the dangers of flushing anything other than the three P's – pee, poo and (toilet) paper – down the drains.

Heavy rain can also overwhelm our sewers, so for us, sustainable drainage means encouraging natural drainage as well as protecting, maintaining and enhancing our sewer network and treatment sites. Find out how, whenever possible, we take advantage of opportunities to deliver more sustainable drainage (SuDS) solutions to increase our sewer capacity and reduce and slow the flow of surface water into our network.

We also focus on our sewage treatment compliance and the "super sewer" designed to help stop sewer overflows and improve water quality in the River Thames by capturing tens of millions of tonnes of sewage every year from the most polluting combined sewer overflows built by the Victorians. You can find out more information on how we've been developing an approach for strategic long-term drainage and wastewater management planning in London. This strategy, called London 2100, will tackle a range of challenges including population growth, climate change, land locking of our sites, ageing assets and striving to meet tighter environmental standards.

Sewer flooding incidents.

Sewer flooding can occur when the sewer network becomes overwhelmed during intensive rainfall, or because of a blockage or collapse. Sewer flooding can have a catastrophic effect on customers' homes and livelihoods, as well as posing an environmental risk.



The problem.

Although our sewer networks are largely in good condition, the combined effects of urbanisation, climate change, population growth, modern lifestyles and an ageing infrastructure mean many networks handle much larger volumes of wastewater than they were originally built for. In addition, sewer abuse - when the wrong things are put down the drain - also poses a challenge for our network.

We saw an improvement in our sewer flooding performance during 2017/18, with a 12 per cent reduction in sewer flooding incidents. In 2017/18, 1062 properties suffered sewer flooding due to blockages, collapses or equipment failure – less than the previous year. In 2016/17, 1106 properties experienced incidents of internal sewer flooding due to other causes.

We've continued to be proactive in our approach with sewer cleaning, and letting our customers know what they can do to help stop sewer flooding. This information can be found in the [preventing sewer flooding](#) section of our website.

Click on the case studies below to read more about the monster Whitechapel fatberg and how we're proactively engaging with food businesses about responsibly managing and disposing of waste fats, oils and grease (FOG) to help reduce blockages and sewer flooding.

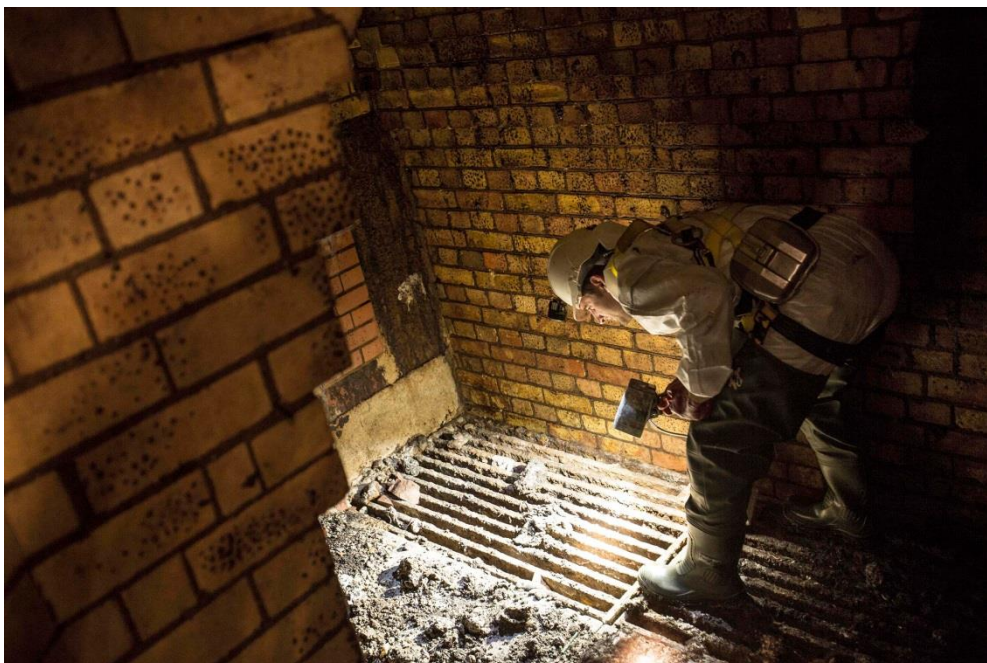


[Protecting our network from Fats Oils and Grease FOG \(0.46MB\)](#)



[The monster Whitechapel fatberg \(0.75MB\)](#)

Preventing sewer flooding.



What we're doing.

Investing in our network - we delivered sewer flooding alleviation schemes to an equivalent of 40 properties during 2017/18. We've increased investment in controls on our network, including sewer depth monitors, to provide real time warning when sewage levels rise, so we can locate and clear any blockages before they cause sewer flooding.

Proactive maintenance response - we're taking a more proactive approach to maintenance, and we've reduced the occurrence of repeat incidents by increasing focus on the most affected areas. We regularly monitor, clean and repair sewers in high risk areas, to reduce the risk of blockages and collapses.

Efficient management of our network - we regularly monitor, clean and repair sewers in high risk areas to help make blockages and collapses less likely. Our innovative new acoustic technology has helped us target and remove potential obstructions in sewers before sewer flooding occurs. We're also working on 31 drainage strategies for areas which have previously experienced problems with sewer flooding.

How we're responding - with increased monitoring and data insight from our 'storm chasing' efforts, we can mobilise teams to check manholes in affected areas before problems occur. We can move the sewage away from the affected pipe by 'over pumping' wastewater into another section of the network. Better insight also gives us more time to arrange for tankers and flooding barriers to travel to the area, to remove or divert large volumes of sewage before it floods local properties. To avoid sewage backing up through neighbouring pipes, we can also install 'stoppers' between customer pipes and affected sewers.

Supporting surface water management - we support innovative surface water management (SWM) schemes which reduce or slow down the volume of rainwater flowing into the sewer system across our whole region. Read more about SWM schemes on our [sustainable drainage management](#) page.

Working in partnership - we work with council environmental health departments to target particular hotspots. We're also members of the WaterUK Sewerage Network Abuse Prevention (SNAP) group, which represents the national water and sewerage sector, and aims to prevent incorrect usage of public sewers.

Campaigns - alongside our extensive customer engagement programme, after the now-notorious Whitechapel fatberg was discovered in our sewers, we've continued to invest in our 'Bin it, don't block it' marketing campaign. Especially in hot spot areas, we're doing this to highlight the dangers of flushing anything other than the three P's – pee, poo and (toilet) paper – down the drains. We've invested £1.3 million in our campaign during 2017/18, communicating with people in 300,000 residential properties. Sewer blockages create problems for the environment, our customers and the smooth running of our network. So customer engagement and education is a key part of our approach to keeping our wastewater operations healthy.

Pollution prevention activities.

We take our responsibility for protecting our environment very seriously, and we're still working hard to prevent our operations causing environmental damage. We're responsible for a huge network which includes around 109,000km of sewers, over 4,700 sewage pumping stations and 351 sewage treatment works. In 2017 we saw an overall improvement in our pollution performance compared to 2016. We're pleased with this improved performance, but our whole business remains focused on continuing to reduce pollution incidents from our operations, and minimise our impact on the environment.



A polluted outfall, before misconnection investigations have been carried out.

Our current performance.

	2015	2016	2017
Serious pollutions (Cat 1 and 2)*	12	10	10
Total pollutions (Cat 1- 3)*	265	357	303
Self-reported pollutions (%)**	61	67	73

* The Environment Agency categorises pollution incidents on a scale of one to four: Cat 1 - major environmental impact, Cat 2 - significant, Cat 3 - minor, Cat 4 - no impact

** Figure represents the percentage of the total pollutions (Cat 1-3) that were self-reported by Thames Water to the Environment Agency.

The figures included in the Annual Report (SC2 - total pollutions including consented) are pollution numbers according our ODI methodology agreed with OFWAT and do not include pollution from surface water outfalls. This accounts for the differences between the figures in the Annual Report and the table above.

We've improved in our overall performance for 2017 (a calendar year measure) with a 15 per cent reduction in the number of pollution incidents compared with 2016. Our performance for serious pollutions has remained the same and we must do better. Sewer abuse was a contributory factor to some of these. We continue to improve on our self-reported pollutions, which increased from 67 per cent in 2016 to 73 per cent in 2017. This brings us closer to meeting our target of 75 per cent of incidents being self-reported by 2020. Our compliance with numeric discharge permits also saw an improvement in 2017 compared with 2016, registering 99.5 per cent (two failures).

Improvements we've made.

We know that performing well with our pollutions performance is a fundamental part of our existence and we've learned from the past. Since our pollution incidents between 2012 and 2014, our approach to pollution prevention is now very different, and our long-term aspiration remains to eliminate serious pollution incidents completely. We've reviewed how we do things at all levels of our business, and made a number of changes:

- Increase in investment - in 2017 we invested an extra £40million increase in repairing broken equipment at wastewater sites. This will directly improve our environmental performance, and reduce the risk of pollution incidents.
- Our Waste Control Team – we've continued to expand the resource available within this department, which includes a new team of environmental data technicians. These experts joined us in 2017, and they're responsible for monitoring data on the quality of final effluent discharges at our sewage treatment works.
- Increased sewer network monitoring – we installed approximately 450 new monitors in our wastewater network to reduce the risk of flooding and pollution, as well as to meet new regulatory requirements.
- Increase in sewage treatment personnel – we're increasing the number of operational staff in our sewage treatment teams, with new roles being created.
- Pollution response equipment trials – we've conducted trials in one of our regions to see how carrying extra equipment (such as booms and spill kits) can help our pollution response teams to react more quickly to incidents.
- Customer education programme – we're continuing to invest in our [Bin it – don't block it](#) marketing campaign, particularly in hot spot areas, to highlight the dangers of flushing anything other than the three P's – pee, poo and (toilet) paper – down the drains. We invested £1.3 million in this campaign during 2017/18.
- Community open days - we held an open day at Aylesbury sewage works in July 2017 to show local residents and other stakeholders what we've been doing since the past pollution incidents in 2012-14, and meet the people who run the sites.

Tackling misconnected drains.

Our customers sometimes unknowingly pollute local watercourses by misconnecting toilets, kitchen and bathroom appliances to surface water drains instead of the foul (wastewater) sewer. We estimate that as many as 60,000 properties across our region are misconnected. Property owners could face the risk of being prosecuted and fined up to £50,000 if they don't put it right.



A polluted watercourse as a result of misconnected properties.

Across our region, there are three types of drains that take water and wastewater away from a property.

- **Foul (wastewater) drain** - where dirty water from toilets, washing machines and sinks is collected and flows to our sewage works to be treated.
- **Surface water drain** - where clean rainwater from roofs and ground runoff is collected and released directly into a local watercourse.
- **Combined drain** - where both foul (wastewater) and surface water are collected in the same drain, which is then taken to our sewage works and treated.

Fixing the problem.

Once a contaminated outfall has been discovered (in other words, foul water is going where it shouldn't), we can trace the pollution back to specific properties.

In 2017/18, we helped our customers fix faulty plumbing at approximately 736 properties across 45 catchment areas – a total area covering more than 42,000 properties. In these areas we identified 1,926 misconnected appliances.

We're continuing to investigate another 101 surface water catchments, an area which covers over 134,000 properties. To date we've found over 2,050 properties with misconnections across these catchments. We use a range of techniques to identify misconnections - from sample analysis to simpler techniques including dye testing and placing wire cages in our sewer network to catch unwanted debris. Our best friend, however, is sewage fungus which is an easily identifiable natural indicator of pollution. Learn more by clicking on the link below:



[Outfall safari and tackling misconnections \(0.32MB\)](#)

Working with others.

Our dedicated Environmental Protection Team works with the Environment Agency and local authorities to combat the issue of misconnections.

We've been working in partnership with a range of organisations to proactively identify polluted surface water outfalls. We're part of the [ConnectRight campaign](#), working with environmental regulators, other water companies, local authorities and interested organisations, to reduce water pollution from drains and sewers.

Working in partnership with the Zoological Society of London (ZSL), volunteers armed with a specially designed pollution app have also been helping us identify polluted outfalls by capturing and sending us details of their whereabouts as they find them when walking along our watercourses on 'outfall safaris'.

"There is no doubting the positive impact of Thames Water's Surface Water Outfall Programme (SWOP) in improving rivers by removing sources of pollution that enter them from misconnections. Since 2016, ZSL and partners along with over 100 volunteers have surveyed 142 km of river in London and sent reports of pollution to Thames Water's SWOP team. The surveys confirm that the extent of the pollution problem is worse than we had previously thought so, along with a host of other ways to tackle the problem such as public education, we need more of Thames Water's SWOP work to effectively tackle this serious environmental issue."

- *Joe Pecorelli, Project Manager, Conservation Programmes, ZSL*

Surface water management.

We're working in one of the most densely populated and urbanised regions in the UK, which places a lot of pressure on drainage. Without action, population growth, urban creep and climate change would increase the likelihood of sewer flooding and pollution. Historically our response has focussed on engineering solutions, typically using storage tanks, but we're shifting our emphasis on reducing the volume of surface water entering our sewers with sustainable drainage systems (SuDS), creating capacity to manage future challenges in a more cost effective way.



Installing sustainable drainage in west London.

What are we doing?

We're working with government, local authorities, organisations, charities and customers to raise awareness and make sure water is managed more sustainably. We share our data and expertise with local authorities and organisations, and contribute to local plans on surface water management plans. We continue to work with Defra, WaterUK and developers on the challenges facing SuDS, helping to raise awareness of sustainable water use, and managing the impact of new developments on our sewer network. We also use innovative software to explore SuDS opportunities across our region and contribute to the installation of SuDS schemes. Click on the case study below to find out more:



[Sustainable drainage systems planning tool \(0.30MB\)](#)

We are also continuing work to make sure our key operational sites can withstand and quickly recover from the impact of flooding caused by storms. We have developed river and rainfall flood risk maps to predict how storms could affect our sites, and to identify the increased risk presented by climate change.

In 2015, we launched a SuDS programme to disconnect 20 hectares* of impermeable land from the combined sewer network. We will be developing Drainage and Wastewater Management Plans to increase the scale and pace of this work, targeting areas with the least available capacity in the

sewers. We have developed a programme to disconnect more than 65 hectares between 2020-2025 by:

1. Providing up to £150,000 to each of the 93 local authorities with overall responsibility for surface water to contribute to SuDS schemes
2. Forming partnerships with three Lead Local Flood Authorities with some of the greatest pressure on drainage capacity to jointly deliver a range of projects
3. Funding third-sector bodies (including schools and environment groups) to deliver SuDS
4. Installing a range of schemes ourselves in areas with the least available capacity in sewers, using large-scale SuDS and sewer interception / storage schemes

**One hectare is roughly the size of an international rugby pitch or the area inside a 400 metre athletics track.*

What can you do?

- **Capture more rain** - collect rainwater in tanks or water butts to use in your home and garden, reducing the amount of water taken from the tap.
- **Encourage natural drainage** - allow rainwater to naturally soak into the ground with SuDS like soakaways, flower beds and permeable paving, all of which slow rainwater run-off and ease pressure on our sewer network.
- **Use less water** - become more water efficient and reduce the amount of water you use, helping to save money and protect the environment.

Sustainable sewage treatment.

We transport and treat 4.4 billion litres of sewage per day for 15 million customers. We need a healthy natural environment to manage treated wastewater, and we're continuing to work hard to make sure our sewerage network and treatment sites are as sustainable as possible.



Aeration lanes at Beckton sewage treatment works.

Maintaining compliance.

Once wastewater has been safely treated, the water is discharged from our sewage treatment works into local watercourse. This means it's really important for us to get our treatment processes right, to make sure the watercourses stay healthy.

The Environment Agency is responsible for setting quality standards for discharges from our 351 sewage treatment works. We must pass every discharge quality test to meet our sewage treatment works compliance commitment of 100 per cent, but in 2017/18 only 99.43 per cent of our sewage treatment works achieved their discharge compliance target. Some of the problems were the result of extreme wet weather, unconsented discharge of effluent into our sewers by customers and human error.

To make sure we meet our compliance commitments in the future, we've continued to invest in our assets - for example, by installing new inlet screens to reduce the likelihood of problems during the treatment process, and upgrading our site monitoring technology so we can respond quickly when problems do occur.

London Tideway improvements.

We're working to improve the water and sewer networks across London to make sure they can cope with current and future demands. One of the biggest projects to improve and future-proof our network is the Thames Tideway Tunnel (also known as the "super sewer"). We're working with Tideway (Bazalgette Tunnel Limited) to deliver the Thames Tideway Tunnel.

When it's complete, together with the Lee Tunnel, it will prevent millions of tonnes of sewage from overflowing into the tidal Thames every year from the capital's overloaded Victorian sewer system. The new tunnel will pipe sewage to our Beckton treatment works where we'll return clean water to the

environment and use the sewage waste to generate more renewable energy. Find out more about the tunnel and its progress at www.tideway.london.



[Super Sewer - a cleaner and healthier River Thames \(0.61MB\)](#)



[Tidefest - celebrating the River Thames \(0.68MB\)](#)

London 2100.

The water industry, through WaterUK, has developed an approach for strategic long-term drainage and wastewater management planning (DWMP) and we are applying this methodology to London. This strategy will tackle a range of challenges including population growth, climate change, land locking of our sites, ageing assets and striving to meet tighter environmental standards.

The scale of these challenges means we need to think differently about the future, and look far beyond the conventional five-year price review cycles of the water sector. London's wastewater system is immense and complex, and significant changes will take time to achieve.

A much longer-term approach is needed to manage risks and embrace opportunities for innovation, which is why we're now considering time horizons of 25 and 80 years in a way that reflects water resource planning. We call this new approach London 2100. Click on the case study below to find out more:



[London 2100 - Applying a drainage and wastewater management framework to London \(0.36MB\)](#)

- › Sustainable & safe workforce.
- › Health and safety.
- › Health and wellbeing.
- › Our people experience.
- › Developing our people.
- › Our future talent.
- › Diversity and inclusion.
- › Partnerships and unions.

Sustainable and safe workforce.

The health, safety and wellbeing of our people is our number one priority. We couldn't do the work we do without our people so it's important we maintain a talented workforce who feel motivated to give their best and who return home safe and well each day. That's why we're committed to our Zero incidents, Zero harm and Zero Compromise vision.



In this section of the report, read about our zero compromise approach with health, safety and wellbeing and how we're continuing to create a culture where wellbeing as well as safety is accepted as part of what we do every day. Our health and safety performance has improved significantly in recent years with the help of innovative technology such as Unmanned Aerial Vehicles (UAVs), also known as drones. Our initiatives also help to create a positive workplace and support a healthy lifestyle, and are leading to happier, healthier employees.

As well as a safe workforce we need a sustainable one. Find out how we strive to recruit and retain the best people, and provide them with support and opportunities to maximise their potential. We want our talented people to be proud, engaged and passionate about our business – after all, they're at the heart of serving our customers well.

Health and safety.

We're committed to achieving our vision of 'zero incidents, zero harm, zero compromise, every day we are at work' and every employee, contractor and visitor without exception, has the authority to stop any activity that can't be done safely. We encourage our employees to help make the workplace a safer environment, and through reporting safety observations we're able to put things right before they can cause incidents.



We have a clearly defined strategy, safety protocols and standards that are set, monitored and reported to our board members and executive team each month. We're continuing to introduce initiatives based on emerging risk areas to reinforce our vision of 'Zero incidents, Zero harm, Zero compromise' every day. Our key initiatives in 2017/18 were:

- To work with designers in our supply chain to identify and remove hazards early in the building design process and enable safer workplaces for employees undertaking construction and for those who would operate on sites and with the equipment in the future
- To continue to change perspectives of mental health by developing an innovative mental health programme, including the use of an award winning virtual reality training programme
- To provide every employee the opportunity to understand and help make changes to their health and wellbeing with personal medical assessments, and to take part in programmes such as those which help stop smoking and lose weight

We're reducing health and safety risks by using unmanned aerial vehicles (UAVs), commonly known as drones. UAVs provide safer access to confined spaces or hard to reach places like roofs, towers and sewers and can significantly reduce the time and cost associated with traditional forms of access, such as scaffolding. Read more by clicking on the link below:



[Innovative maintenance using unmanned aerial vehicles \(0.32MB\)](#)

Performance and improvement.

We use a range of metrics to assess our performance, including those in the table below. We're committed to improving safety standards across our sites and seeing a noticeable shift in the safety culture of our business. We measure lost time injury performance using frequency rates and in 2017/18 we moved from 0.21 incidents per 100,000 hours worked to 0.14 – a 33 per cent reduction. We've seen an encouraging 19 per cent increase in the number of hazards being reported by our employees - preventing incidents before they occur. 860 senior management inspections were carried out last year, with the total number of management inspections increasing by 6 per cent.

Under RIDDOR regulations, we're required to report to the Health and Safety Executive all specified injuries, lost time injuries involving more than seven days lost time, work-related diseases and certain types of incidents not involving injury known as dangerous occurrences. Our benchmark we set to outperform for 2017/18 was 19 notifiable injuries based upon a 20 per cent reduction from injuries that we had incurred in the previous year; in 2017/18 we reduced notifiable injuries further to 17.

Unfortunately, during the year, we had a number of dangerous occurrences, resulting from lifting incidents and equipment failure, which took us over our agreed total notifiable incident benchmark on this measure. We're committed to learning from all incidents, to make sure we implement the necessary controls to prevent them happening again.

Indicator	Actual 2016/17	Actual 2017/18
Reportable injury frequency rate – based on reportable injuries under RIDDOR per 100,000 working hours	0.08	0.15
Lost time injury frequency rate – based on lost time injuries over 1 day per 100,000 working hours	0.21	0.14
Reported work related illness resulting in lost time over 1 day	29	16
Hazards (unsafe acts/conditions) reported and investigated	37,742	44,759
Management Health and Safety inspections	24,213	25,644
Health and wellbeing surveillance	4,909	5,719
Health and safety training days	13,529	14,248
Number of fatal employee accidents	0	0
Number of customer/community accidents	0	0
Number of fatal customer/community accidents	0	0

Looking forward.

This year we'll continue our drive towards achieving excellence in health, safety and wellbeing by introducing further new initiatives aimed at supporting our people across the business and our partner organisations. Our key initiatives in 2018/19 will include:

- Virtual Reality - further develop our immersive and virtual reality platforms for a full range of health and safety courses
- Targeted Leadership Engagement – enhance the senior management site visit programme and content
- Pascal - develop and launch a tool that supports our “Time to Talk” strategy which aims to eliminate the stigma around mental health.

Health and wellbeing.

Health and wellbeing are essential to making Thames Water a better place to work. We make sure standards are in place, and regularly reviewed, in order to help protect everyone from short-term and long-term occupational health conditions. We also provide everyone with key information to help achieve our vision of Zero harm, and enable those who work for us to make lifestyle choices that can lead to long-term health benefits.



We recognise that a positive workplace and lifestyle factors lead to healthier, happier people with fewer health and safety issues. Our health and wellbeing strategy is based on four distinct areas – worker, workplace, wellbeing and the wider community. We're striving to be industry leading in health, safety and wellbeing and we're continuing to place great importance on proactive prevention of exposure to risks, while creating an environment where all our people can improve their own health and wellbeing by making informed choices.

Our objectives last year addressed mental health, physical health and health screening. Developing and launching our innovative mental health strategy, Time to Talk, has been influential in our progress in removing the stigma around mental health at work. In addition, we were able to increase uptake of our personal medical assessments for the fourth year running, as well as organising 57 activities during Water Wellbeing Week which over 20 per cent of our workforce were able to participate in a new activity.

Our wellbeing initiatives.

Over half of our employees attended a PMA last year, during which over 20 per cent were found to be suffering from silent but potentially life threatening health issues, and were subsequently referred to their GPs for further investigation and treatment. Since PMAs began in 2013, we have had over 100 abnormal prostate specific antigen (PSA) blood results requiring further investigation and know of a confirmed 13 cases of early prostate cancer amongst our employees, who have all been able to access treatment prior to showing any symptoms. New sessions to support weight loss and quitting smoking have also been introduced as part of the wellbeing programme. We also offer a cycle to work scheme and access to fitness and wellbeing discounts.

Water Wellbeing Week in October 2017 focused on positive mental health and offered over 57 activities known to boost positive mental wellbeing – these included meditation, Pilates, kick boxing and board breaking. The week was extremely successful with over 20 per cent of our employees participating.

We have also facilitated physiotherapy led training sessions for employees to enhance physical resilience against injury. This includes assessments for those in operational roles and as well as those who use display screen equipment (DSE) to enhance physical resilience against musculoskeletal health problems.

Mental health awareness.

Promoting mental wellbeing has been a key focus for us. Through a sustained approach of highlighting the importance of mental health at work and our other wellbeing initiatives, we've seen a gradual reduction in work related mental health referrals and nearly 80 per cent reduction in time lost to illness over the last five years.

As part of our continued commitment to changing perspectives in mental health, we've developed a new and innovative mental health strategy, Time to Talk. We launched this in April 2017 and it is underpinned by four SPOT principles: Spotting the signs; Providing opportunities to talk; Offering a listening ear; and Talking to professional support services early. Time to Talk aims to remove the stigma around mental health at work with initiatives including mental health awareness training, open engagement forums and MIND's Time to Change pledge.

Our innovative virtual reality training has been influential in our progress in mental health and for more information click on the case study below. During the year we have trained over 200 mental health first aiders and 507 employees have taken part in the Mind Fit mental health awareness programme.

Over the past year we have recorded a 46 per cent reduction in work related mental health absence cases. We were awarded the REBA Employee Wellbeing Award 2018 for Mental Wellbeing and featured in the Thriving at Work white paper and the Shaw Trust mental health report as a result of our progress in this field.



[Virtual peek into the future of mental health support \(0.24MB\)](#)

The continuing journey.

Our positive outcomes from last year have helped define our three objectives for 2018/19:

1. Pascal - develop and launch a tool that supports our "Time to Talk" strategy aimed at further removing the stigma around mental health.
2. Posturize – we will enhance the understanding of workplace posture through the development and introduction of a new workstation assessment programme.
3. Defeating inactivity – we will improve the support for our employees to easily access opportunities for improving their personal physical activity.

Our people experience.

We're committed to providing an employee experience which attracts great people to join our family, and develops, challenges and supports the great people who are already a part of it. We strive to recruit and retain the best people, and provide them with support and opportunities to maximise their potential. We also aim to make sure our employees are engaged and focused, and that they stay safe when they're working on our own sites and in other locations.



Our vision and values.

Our vision is to be 'Here for you, in a changing world' – which means anticipating and delivering our customers' needs. Delivering our vision depends on the talent, commitment, collaboration and well-being of our people. Our values are also a huge part of how we do business, work together and continuously improve for our customers.



Developing our people.

Our success depends very much on the confidence, competence and performance of our people. Providing opportunities for people to learn and grow is fundamental to helping retain and attract skilled employees.



Learning and development.

Developing and supporting our people is vital to our success as a business and is one of our values - we want everyone to 'Reach higher and be better'. Last year we held over 23,000 training days across the company. We have a formal annual appraisal process and encourage employees to progress their careers using personal development plans, development modules, e-learning, networks, mentoring, sponsorship and development programmes.

We're investing in training technology across the business - for example upgrading our health and safety training to incorporate the innovative use of immersive virtual reality training scenarios. Recognising the threat of cyber security, particularly in our industry, we've rolled out cyber security and general data protection regulation (GDPR) training across the business.

Alongside our general learning and development, our 'talent pool' focuses on development and experiential learning for our top and emerging talent. We also use our 'talking talent' process to support succession planning, identify future opportunities and risks, and support business continuity.

Our employee engagement

It's really important to us that our people have a voice and are heard. We strive to engage with all our people, and formally and informally measure levels of engagement across all teams. Every year we have our 'Hear for you' employee survey to give all employees a chance to tell us how we're doing and create a company we can all be proud of.

The outputs of the survey inform our continuous improvement plans. For example, we made changes for our Customer Experience team which have led to an increase in engagement scores with 70 to 75 per cent of our people taking the time to respond, a reduction in sickness absence and a number of internal promotions. Some actions included introducing a career development framework for our operational teams, introducing a new specialist agent role in our contact centres to support front line agents, and investing more time in our teams with daily huddles, team meetings, 1-2-1s and development conversations.

We also regularly meet with our people and give them the opportunity to ask questions, raise concerns and celebrate successes. These sessions range from team meetings, conferences or communication through our internal social media platforms and web debates. Feedback from these sessions often directly leads to local and company-wide changes.

Hear for you

Reward and recognition.

During the year we launched 'Share in Your Success 2020' for all employees in non-managerial grades. This scheme, which offers a potential payment of up to 5 per cent of salary in 2020, is linked to delivery of our transformation plan.

It's also really important we celebrate success, so we have a recognition scheme that helps our people to be instantly recognised for having done something extraordinary. We hold annual award events where we celebrate people who have excelled in demonstrating our values, championing health and safety, and when our people go the extra mile for our customers. In 2017 there were 1,117 nominations for our 'Spotlight' employee awards, an increase of 19.5 per cent on the previous year. Chief Executive Recognition awards were given to a number of employees, including the Grenfell Tower incident response team.

Our future talent.

Finding and nurturing new talent now is important, because we need an army of operational staff ready to take over from those who will retire in years to come. We run traineeships, apprenticeships and graduate programmes to develop technical and leadership skills and nurture the talent we'll need for the future. Our schemes for attracting new talent also include the numerous events we run in schools and colleges.



Primary and secondary school.

Our long term talent pipeline starts with the work we do with primary schools, where we encourage children to think about science and technology through energising projects. Our work with secondary schools is more focussed, and we look to engage with students who could potentially become our employees.

We're building our relationships with schools and colleges across our region, sponsoring the London Design and Engineering University Technical College, and supporting both Reading and Swindon University Technical Colleges, to promote science, technology, engineering and maths (STEM) subjects and inspire the next generation of Thames Water employees.

Last year, as part of our schools outreach programme, we visited more than 125 schools to deliver talks and activities to enhance learning about our business. Our community speaker programme, delivered by our employee volunteers, reached over 5000 students.

Our graduate programme.

Our graduate programme is all about creating future leaders. Last year we recruited 38 graduates onto this programme. Our graduates are given an opportunity to develop real leadership skills and professional technical qualifications. As part of the programme, each of our graduates is placed into a business role to ensure they get hands-on experience. They also play an important part in supporting our work with WaterAid, helping to raise valuable funds.

Our apprentice programme.

Integral to our pipeline for more technical roles is our successful apprenticeship programme, which we've been running for many years. Last year we welcomed another 37 apprentices. Through on and off the job learning, our apprentice programme helps us to 'grow our own' talent, developing skilled individuals to meet our future demand for technological expertise. All successful apprentices are guaranteed a job with us at the end of the programme, and we've seen many of them progress to senior levels within our company.

Providing further opportunities.

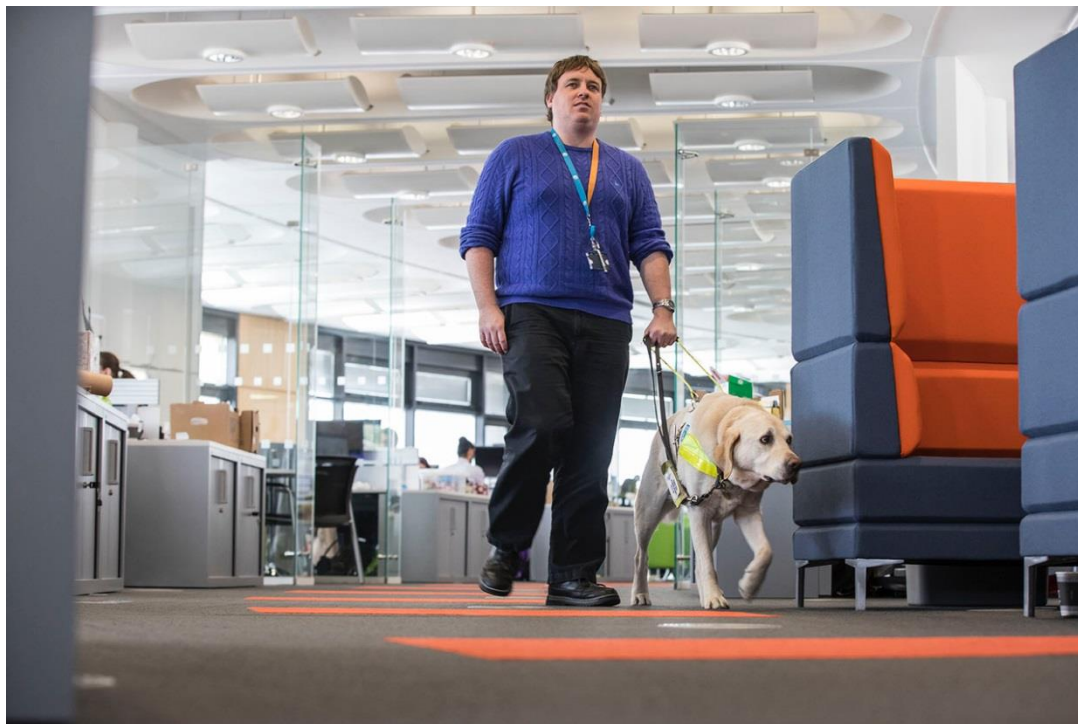
We've been driving our women's leadership pipeline, and we sponsor two development programmes alongside women's network groups. We've seen a number of promotions into our senior leadership roles and improvement in female representation across our grades. Within the year, 39 per cent of people promoted are female and 67 per cent of people promoted to executive positions are female; 30 per cent of our executive team is female.

Giving people a start.

Our Give Someone a Start (GSAS) work experience programme continues to be a success. GSAS offers those not in employment, education or training and those with mental and physical disabilities who may need extra support in finding a role, three weeks experience of working life at Thames Water. We have been supporting this programme for the past six years, with 21 per cent of people on the programme subsequently offered an interview with us.

Diversity and inclusion.

Our customers and colleagues have a diverse range of backgrounds, beliefs and customs. We can serve customers, support colleagues and work better together if we have a diverse, understanding and inclusive workforce with employees who feel pride in working for an organisation that encourages, supports and respects individual differences, valuing and including everyone.



The attitude and behaviour of everyone working for Thames Water can have an impact on our reputation. It's important to us that all our employees can be themselves at work and are able to give their best. We make sure everyone is provided with the same opportunities and is treated with respect, irrespective of their age, disability, gender reassignment, marriage and civil partnership, pregnancy and maternity, race, religion and belief, gender or sexual orientation.

Providing support.

We're a Disability Confident Employer. During the year we actively focused on attracting people with disabilities to our company, promoting opportunities at disability job fairs and were invited as a keynote speaker at the Stronger Together Access to Work event. We support employees who become disabled during employment too, including offering flexibility and making reasonable adjustments to the workplace to ensure they can reach their full potential. During 2017/18 we upgraded our facilities such as installing hearing loops and improving accessible parking, lifts and toilets.

As well as focusing on attracting, supporting and retaining people with disabilities, we also raised awareness of physical disabilities via our own version of 'Dining in the Dark' at some of our key sites which generated money for Guide Dogs for the Blind as part of our celebration of International Day of Disabled Persons.

As a Stonewall Diversity Champion, we promote an inclusive culture where all LGBT+ employees are accepted without exception, and we're continuing to be sponsors of Pride events across our region providing hydration stations, highlighting vacancies and engaging with our customers. We also submitted to the Workplace Equality Index for the first time and were incredibly proud of the results.

Flexible and smarter working.

We're continuing to promote the benefits of flexible working. 93 per cent of women returned to their roles after maternity leave. We offer mentoring for those returning to work after an extended break, and have been granted a Bronze award by the Armed Forces Covenant Employer Recognition Scheme for our support of the Armed Forces community.

Gender pay gap reporting.

We published our first [gender pay gap report](#) in December 2017 using a snapshot date of 5 April 2017. Since then we have been taking positive steps towards reducing our gender pay gap as part of our wider diversity and inclusion strategy. Our mean gender pay gap has reduced from 13.3% at 5 April 2017 to 10.8% at 5 April 2018, but we continue to have work to do to address our gender pay gap.

Gender pay looks at average earnings for women and men, regardless of their role – unlike equal pay, which is about men and women being paid the same for doing the same work. The reasons for a gender pay gap are complex but can often highlight the culture and opportunities for women to progress and reach higher positions within organisations.

Human rights and ethical behaviour.

We acknowledge the United Nation's Guiding Principles on Business and Human Rights, so we have policies and procedures in place which ensure we're compliant with these requirements, and that they're enforced throughout our business. We seek to promote a culture of honesty and integrity in all our dealings, and we will not tolerate acts of fraud, dishonesty, bribery, corruption or theft of assets or data from the business.

Our Code of Conduct, together with our Honest and Ethical Behaviour policies, expresses our approach to business activities and how we work. These provide a clear, ethical and legal framework for our employees, customers and stakeholders, and clearly set out the minimum behaviours we expect. Our code covers a wide range of human rights issues, including discrimination, working conditions and equal opportunities. We have a confidential 24-hour Employee Assistance Helpline available and a robust whistleblowing process in place for any of our people to ask questions or raise concerns. Our contractors and alliance partners have also agreed to follow the provisions of this code.

You can find our latest Modern Slavery Act statement, and the steps we are taking, on our website, alongside our Honest and Ethical Behaviour policy – click on the links below to read them:

[Modern Slavery Act Statement 2018 \(0.19MB\)](#)

[Honesty and Ethical Behaviour Policy 2018 \(0.34MB\)](#)

Partnerships and unions.

We pride ourselves on our partnership approach to working with our trade unions to ensure that our peoples' voices are heard on the issues that matter most to them. Whatever we're reviewing, changing or introducing, we do it all in partnership.



We regularly meet trade unions, and where appropriate non-union representatives, at senior and working levels, to discuss issues affecting employees. We've actively engaged the joint trade unions at a company level on pensions and pay, undertaking a joint survey of all our people, both union and non-union members. Significant work has been undertaken during the year in relation to developing proposals to make our pension schemes sustainable. This included town hall events and workshops with some 2,000 affected employees, as well as formal consultation meetings with trade union and scheme representatives. We remain committed to delivering an industry leading employee relations environment, to support all of our people as they reach higher to deliver excellent service for our customers.