



Corporate Responsibility and Sustainability (CR&S) Report 2016/17: Content

This is an archive record of 2016/17 CR&S report content. Where we have used hyperlinks, they may not be active any longer. All case studies have been archived in a separate document.



How we do business.

Over £1 billion invested in the last year.

[Find out more](#) ➤



Putting customers first.

4.12 out of 5 in our Ofwat customer satisfaction rating.

[Find out more](#) ➤



A precious resource.

99.96% drinking water quality compliance.
Missed leakage target for first time in 11 years.

[Find out more](#) ➤



Ensuring responsible operations.

£250 million upgrade to Deephams sewage treatment works.

[Find out more](#) ➤



Addressing climate change.

Reduction in net GHG emissions - equivalent to emissions from electricity used by 177,000 households.

[Find out more](#) ➤



Delivering efficient operations.

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

[Find out more](#) ➤



Providing sustainable drainage.

42 per cent decrease in pollution incidents since 2013.
£19.75 million fine for 2012-14 pollutions.

[Find out more](#) ➤



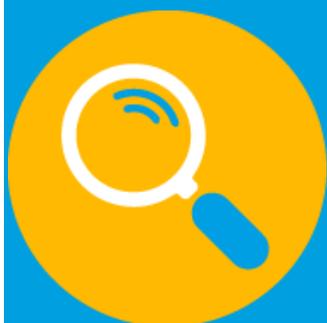
Sustainable & safe workforce.

First time zero employees off work with a work-related injury.

[Find out more](#) ➤

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.



Putting customers first.

Here at Thames Water, we're continuing to transform ourselves into a business where our customers are placed at the heart of every decision we make. We work hard to deliver a service our customers can be proud of – while we also aim to provide safe and satisfying employment for our people, and remain attractive to our investors.

We're committed to conducting our business with integrity, openness and transparency. That's why we go to great lengths to communicate with our customers in a way that's up-front, clear and thorough. It's also why we're always looking to make bill paying easier and provide accessible customer service support.

Over the last year, we have engaged with thousands of our customers on numerous topics, including intergenerational fairness. After all, it's customers who ultimately pay for infrastructure investments through their water bills, often over very long periods of time. The way we spread the cost of such investments over time can affect different generations in different ways, so we wanted to hear what our customers thought was the fairest way of doing this.

Working with others.

Working in partnership with our regulators, trusted suppliers and integrated alliance delivery partners continues to be 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 and 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.

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.

We've identified a series of basic services and benefits (what we call 'outcomes') in our 2015-20 business plan which we aim to provide for our customers, community and the environment. One of these outcomes specifically underpins our approach to becoming more sustainable:

"We will limit our impact on the environment, to achieve a socially responsible, sustainable business for future generations, including reducing leakage".

As we move forward, our CEO, Steve Robertson, and his executive team have agreed that everything we do will be consistent with the following five principles which will underpin our company strategy:

1. **Listening to our customers, understanding their needs and putting those needs at the forefront of our decision making**
2. **Being good custodians of the environment**
3. **Ensuring that our assets are maintained, renewed and optimised to give the very best 'whole life outcomes'**
4. **Operating our business with optimal efficiency and innovating continuously**
5. **Being crystal clear in all our activities, both internal and external, that we are responsible for the service we give our customers and the health and wellbeing of our assets**

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 Performance Report](#).

Our sustainability policy.

To help us achieve these outcomes all our business activities are underpinned by our nine sustainability themes:

1. **Water, a precious resource.**
2. **Providing sustainable drainage.**
3. **Mitigating climate change.**
4. **Climate change adaptation.**
5. **Ensuring responsible operations.**
6. **Enhancing customer inclusion.**
7. **Delivering efficient operations.**
8. **Sustainable & safe workforce.**
9. **Long-term sustainable investment.**

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.

- [Our sustainability policy 2017 \(0.29MB\)](#)

Governance.

We take our approach to becoming more sustainable seriously and this is reflected in our business plan which is agreed by our board, our executive team and our regulators.

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.

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.

We cover the material issues in this online corporate responsibility and sustainability report. In addition our [Annual Performance Report](#) and [Annual Report and Financial Statements](#) focus on the most significant subjects agreed with Ofwat and our customers. The findings of our assessment are described in our reporting and materiality document below.

- [Reporting and materiality \(0.30MB\)](#)

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 31,000km of water pipes, and 98 water treatment works, to provide 2.6 billion litres of water every day. We also look after 109,000km of sewer pipes, and 351 sewage treatment works, to safely remove, treat and recycle 4.6 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 in England and Wales. It works in collaboration 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 we supply 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 relating to water quality.

CEO's introduction.



We are proud of what we do at Thames Water, so it is always encouraging to know that people want to understand more about our business. But different people want to know different things and we need to be able to tell our story in ways that suit them. The details of our financial performance for the year ending 31 March 2017 are all contained in our financial report, [The next chapter](#), and our [Annual performance report](#) shows how we have done against our operational targets. This report will tell you more of the story behind the numbers, with a wide range of case studies to bring things to life.

At the end of my first year at Thames Water, after a career in the telecommunications industry, I am finding it hugely exciting to be leading a business that touches so many lives every day. It is also a huge responsibility and one that I do not take lightly. 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 and provide a positive legacy for future generations, as well as meeting our customers' immediate needs.

The natural environment is at the heart of the service we provide to our customers. We take water from the environment, treat it to a very high standard and deliver it to our customers' properties. We then collect their wastewater and treat it using biological processes before recycling it safely to the environment. All of these activities have environmental impacts, as does the energy we use and the renewable energy we generate.

Our 15 million customers also play an active part in operating our water and wastewater networks every time they turn on a tap, use a washing machine or flush the toilet. So finding new and effective ways to engage with them and explain our business is a continuing priority. They rely on us to provide them with a good service, but if we don't explain – for instance - why it is important to fix dripping taps or why wet wipes need to go into the bin and not down the toilet, we cannot expect their understanding or cooperation.

I fully recognise that when things go wrong in this business we can have a devastating impact on our customers' lives and on the environment. That is why we work so hard to ensure that things do not go wrong, with proper systems and safeguards. It is also why if things do, nevertheless, go wrong, or we fall short of the high standards our customers rightly expect of us, we are open about what has happened, put things right as quickly as possible and learn lessons for the future.

During the last year we've seen a series of major bursts on some of our larger Victorian water pipes, with devastating impacts on the households affected and traffic disruption over a wide area. We have also missed our leakage target, for the first time in a decade. These failures are being taken seriously, additional investment has been committed and detailed recovery plans are in place. This is a huge

priority for us and we will be keeping everyone up to date on our progress via our website and in the media.

We are also paying a high price both financially and reputationally for major pollution incidents that occurred between 2012 and 2014. Since these events we have put in place new procedures and personnel, and invested heavily in infrastructure, training and control systems, to limit the possibility of any similar events in the future. We have also committed significant funds to improve the river environment in the affected areas.

This report aims to show some of the ways in which we are approaching the task of providing our customers with what is, by any standards, an essential service and the progress we are making in many areas. I am not seeking to play down the significance of the failures I have just mentioned. But it is fair to point out that there is also some encouraging news, in important areas such as the increase in renewable energy generation, the reduction in sewer flooding, offering a 'round the clock' service on social media and innovating across the business in many ways which will improve service to customers, engage more strongly with communities and protect and enhance the environment.

As you read this report, I hope you will see that Thames Water is fully committed to driving changes that will really deliver for our customers. We have started an exciting new chapter and look forward to engaging you in our story along the way. In doing so it is important that we are open and transparent with our customers and stakeholders, so if you would like some more information or have any questions, please [get in touch](#). I look forward to working with you and thank you for your continued support.

- Steve Robertson, Chief Executive Officer

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.

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 actively 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.



London.

In winter 2016, there were eight large burst water mains in London. 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 to explain our plans to minimise the risks of future bursts. In recognising the seriousness of the bursts, we have explained our future plans to local authority scrutiny meetings with elected councillors, liaised with directors of local authorities, arranged briefings and acted as a first point of contact for elected representatives.

Our smart metering programme continues to be rolled out across London. We've engaged with councillors and local communities in a variety of Boroughs including Bexley, Greenwich, Camden, Enfield and Islington. Our aim is to highlight the benefits of our smart metering programme and get an insight into how best to liaise with local groups. Click on the links below to discover more:

- [Being a good neighbour at Streatham Pumping Station \(0.24MB\)](#)
- [Delivering our smart meter programme \(0.28MB\)](#)

The Thames Valley.

The focus of our engagement in the Thames Valley has been around new housing development. With a step change in housing growth being proposed across the Thames Valley, many stakeholders are concerned about how we will cater for the additional demands on our water and wastewater infrastructure, particularly our drainage infrastructure. Throughout the Thames Valley we have been engaging with local councils and community groups to understand their views, obtain the latest council development plans, assess opportunities for joint working and update our own infrastructure plans. Read about our Oxford catchment study by clicking on the link below:

- [Collaboration on our Oxford catchment study \(0.32MB\)](#)

We're also engaging with parish councils in central Oxfordshire to share details of our future water resource plans. These discussions focus on the shortlisted options for long term water resources including a regional water transfer and a new reservoir near Abingdon.

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.



Shaping our long-term plans.

We're engaging with our customers to help us understand the needs and expectations of the diverse customer base we serve, so we can deliver the service they want both now and in the future.

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



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

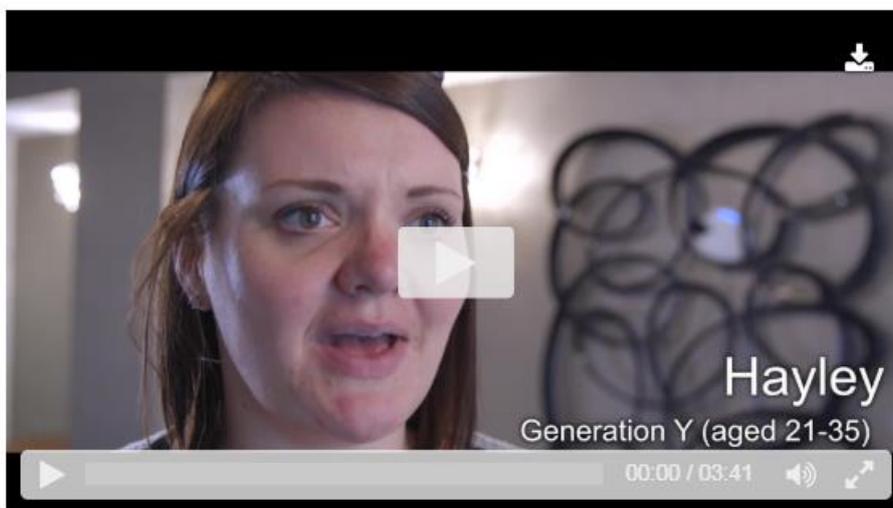
You can also find out more and have your say via this link: [Your Water Future](#)

The intergenerational perspective.

Over the last year, we've engaged with thousands of our customers on numerous topics, including intergenerational fairness. It is customers who ultimately pay for infrastructure investments through their water bills, and often over very long periods of time. The way in which we spread the cost of such investments over time can affect different generations in different ways, so we wanted to hear what customers thought was the fairest way of doing this.

We held an intergenerational debate across five distinct generations, with customers aged between 16 and 91. Customers initially debated the issue within their own generation, before engaging with other generations. We'll use these views to inform how we profile future bills and investments, and we'll continue to explore the intergenerational perspective by engaging with future customers on long-term service resilience issues.

Hear what our customers had to say about intergenerational fairness:



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 on-going tracking surveys to monitor customer satisfaction, together with numerous bespoke projects, including working with customers to develop our high-profile [Bin It – Don't Block It](#) sewer abuse campaign.

Read about our customer service and communications here: [Putting our customers first](#)

Managing public affairs.

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



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.

In May we hosted a parliamentary drop-in to support the 'Bin It – Don't Block It' campaign, explaining to MPs the impacts of wet wipes and fat in the sewers, what we're doing to tackle the issue, and how they can help. Several MPs supported the day, and highlighted our campaign through press and social media activity.

We also hosted round-table discussions focussing on particular issues or groups of stakeholders. This included meeting in November 2016 with representatives from environment charities making up the Blueprint for Water coalition, and meeting in March 2017 with a range of stakeholders to challenge us on how to improve our future plans.

In June 2016 we hosted a site visit and meeting at Hampton water treatment works of the National Infrastructure Commission (NIC), created to provide Government with strategic and politically neutral advice on the country's long-term infrastructure needs.

We continued to work in partnership with a range of stakeholders on issues of common cause, including jointly hosting an event in April with business lobby group London First for stakeholders and major London firms to discuss the future of London's water supply.

Our stakeholder review 2016.

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 2016 event was attended by nearly 100 representatives from regulators, national and local government, environment and community groups and investors.

Guests heard Richard Aylard, External Affairs and Sustainability Director, look back at 2015/16, and an independent appraisal from Anne Heal, chair of the Thames Water Customer Challenge Group.

After the breakout sessions which covered a range of issues, Chief Executive Steve Robertson set out his priorities for the business, before Strategy and Regulation Director Nick Fincham asked the audience to vote on future investment priorities.

The event concluded with Steve and other members of his Executive team fielding questions from the audience.

"I was really encouraged by the level of support for what we're doing, but the most valuable aspect of the day was hearing suggestions of how we can improve. One of my big messages to our guests was that we want to keep that dialogue going."

- *Steve Robertson, Chief Executive Officer*

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

- [ASR - full plenary pack \(2.26MB\)](#)
- [ASR - smart metering and affordability \(2.19MB\)](#)
- [ASR - Water scarcity \(0.82MB\)](#)
- [ASR - wastewater quality \(2.22MB\)](#)
- [ASR - wastewater network \(1.69MB\)](#)

Being a responsible business.

Due to the nature of our business, Thames Water plays an integral part in wider society and the natural and built environment. Our corporate responsibility programme is focussed 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.



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, 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 through four main programmes:

- 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 and Biodiversity policies. Click on the links below to find out more:

- [Our corporate responsibility policy 2017 \(0.20MB\)](#)
- [Our sustainability policy 2017 \(0.29MB\)](#)
- [Our environment policy 2017 \(0.25MB\)](#)
- [Our climate change policy 2017 \(0.30MB\)](#)
- [Our biodiversity policy 2017 \(0.35MB\)](#)

Our education programme.

During 2016/17 we've engaged with over 20,000 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.



Schools outreach programme.

Last year we visited more than 100 schools to deliver talks and activities to enhance learning about our business. Our community speaker programme, delivered by our employee volunteers, reached over 8000 students.

The network challenge, our award-winning engineering exercise, allows children to design, build and test a water network. Last year over 500 children took part in this challenge.

Our education centres.

Our four education centres at Didcot, Slough, Hogsmill and Maple Lodge sewage treatment works provide a fun and informative education experience for schoolchildren, with over 2,000 pupils visiting us 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.

We also host school and community groups at our Angling Academy, situated at our reservoir complex in Walthamstow. Last year over 500 young people visited the academy and enjoyed the opportunity to learn about water, the benefits of green spaces and the aquatic environment while learning to fish. We also engaged with nearly 750 adults at the academy. Click the link below to find out more:

- [Walthamstow Angling Academy \(0.26MB\)](#)

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.

Whether it's a school trip to visit one of our sites, or an outreach activity within a school, our partners range from environmental to engineering organisations, and they all help to support our objectives of reaching young people. This enhances the next generation's learning about water and inspires them to take more interest in science, technology, engineering and maths (STEM).

We've become a lead sponsor in the creation of the London Design and Engineering University Technical College (UTC), and we're also working with other UTCs across our region, as well as our own in-house Give Someone a Start programme. Read more about this by clicking the link below:

- [Give Someone a Start \(0.24MB\)](#)

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.



Firs Farm Wetlands shown above

Investing in communities.

In 2015 we started a new five year community investment programme worth £6.5m*. Last year we provided funding to 16 new and exciting projects and a feasibility study with a total value of more than £1.4m, all of which will be delivered by our community partners.

We completed an exciting new education building and wildlife area at Beale Park during 2016/17 which will allow visitors to learn about nature conservation, native species, ecology, water efficiency, and how water and the environment interact.

Our sustainable drainage schemes (SuDS) for schools project, which we delivered in partnership with the Wildfowl and Wetlands Trust and the Environment Agency, was awarded the 'best practice in innovation' CIEEM annual award. Through this project we successfully delivered SuDS at ten schools in North London which focussed on education and community engagement.

There was further recognition for our work at Firs Farm, a wetland nature reserve in Enfield, which was nominated for a Utilities Industries Achievement Award for best community project. Click on the links below to read more about our 2016/17 community projects:

- [Working with communities \(0.25MB\)](#)

Time to Give.

Our people are empowered and encouraged to volunteer their time for some great causes in the community. During 2016/17, we again demonstrated community spirit and willingness to get involved through our 'Time to Give' programme. We had more than 990 volunteering activities, collectively investing over 7,000 hours across our region.

Over 350 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 27 dedicated science, technology, engineering and maths (STEM) ambassadors in the business, supporting [our education outreach programme](#), as well as 66 volunteers who support the Network Challenge events in schools and colleges like the Reading and Newham University Technical Colleges. Over 180 of our volunteers have engaged with educational institutions to create better outdoor learning activities – this has included making a wildlife garden in a school, and an outdoor play area for disabled children.

Furniture Fiesta is another very popular volunteering projects, working with our charity partners Helen & Douglas House to provide hospice care for children and young adults with life limiting diseases and terminal illness. More than 85 of our people volunteered last year, transforming dark wooden furniture items into shabby chic modern pieces to raise money. Helen & Douglas House have estimated the net value created by our volunteers at £8,095.

"We're really happy that we're able to contribute to improving the quality of life for the hospice children - every penny counts for the patients."

- *Neeti Bindra, Community Investment Coordinator, Thames Water*

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. Read more about our Great Greenway clean-up by clicking on the link below:

- [Time to Give - Great Greenway clean-up 2017 \(0.24MB\)](#)

During 2017/18 we will focus on:

- Walthamstow Wetlands – the site is due to open in autumn 2017 and will be managed by London Borough of Waltham Forest and London Wildlife Trust (LWT). LWT will encourage volunteering and active participation by local communities in the management and conservation of the site, as well as supporting educational visits for over 100 schools in the local area. We are donating £1.8m towards the project's total value of £8.4m.
- Greenway, Ridgeway and New River – further work will be carried out on three of our largest stretches of land with public access, and local councils and community groups will help identify opportunities for access and improving safety.
- Fobney Turbine House – working with key stakeholders Reading Borough Council, the Environment Agency and the Canal and River Trust, we will deliver this project based on a 2015 feasibility study.
- Abbey Mills – we will develop a feasibility study to explore how we might be able to open up access to our most requested site for customers and visitors from further afield.
- Identifying new partners – we will continue to actively seek partners to join us in future community investment projects that fall within the broad themes of engagement, education and enhancement.

**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.

As significant landowners across London and the Thames Valley, we're responsible for some incredibly rich and diverse habitats within our region. We recognise the importance of these habitats for wildlife and we manage a number of nature reserves on our sites exclusively for conservation and access. Through sensitive management, we aim to strike a balance between managing biodiversity and the needs of our water and wastewater operational sites. We have an innovative and ongoing programme of site enhancements and conservation activities to help deliver this. These activities are designed to engage with our customers and stakeholders, as well as the people in our own business.



A bittern found visiting Kempton Nature Reserve.

Wild about Thames.

To raise awareness of the ecological importance of our sites we run a programme of events called Wild about Thames. During 2016/17, these well-attended events included Wild about Wetlands, Wild about Bees, Wild about Woodlands, Wild about Bats, Wild about Orchids, Wild about Fish, and many more. These events help educate our people, as well as our customers, about the importance of our work to conserve and enhance biodiversity. Wild about Thames also helps our operational teams to consider biodiversity impacts at an early stage in their planning.

Community access to wildlife.

During 2016/17, we ran 245 community events at our nature reserves and sites of biodiversity interest, engaging almost 4,000 customers and community members about wildlife. Our events ranged from volunteer conservation activities such as reed clearance, willow coppicing and scrub clearance, to open days, bird walks, moth trapping events, bat walks, and fungi forays.

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 do not currently meet 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 improvements.

Enhancing our sites.

In order for visitors to enjoy more access to wildlife on our sites, we've installed four new paths at Pinkhill nature reserve, Hogsmill nature reserve, Grimsbury reservoir and Staines reservoir. We've also erected two bird hides at Hogsmill nature reserve and Bicester nature reserve, built a composting toilet at Hogsmill nature reserve; and put up new signage and interpretation materials at Maple Lodge sewage treatment works (STW), Staines reservoir, Mogden STW, and Queen Mother reservoir.

To maximise biodiversity opportunities, we built an osprey nesting tower at one of our nature reserves in Oxfordshire, and installed barn owl nest boxes at several nature reserves in east London. We have created more ponds and wetland areas, planted hedgerows and installed tern rafts on some of our reservoirs.

We also reduced summer mowing to make sure there are enough foraging sources and habitats available for both domestic bees and their wild cousins. Grassland and meadows were left to mature and flower throughout the summer season, resulting in over 100,000m² of un-cut grassland habitat in 2016.

Notable wildlife sightings.

During 2016/17 a three day sighting of waxwing birds was reported at Hogsmill nature reserve, a real rarity in London, which demonstrates how site enhancements are encouraging rare species to visit. Waxwing are red listed in the UK, which means they're globally threatened and a high conservation priority.

Bittern, one of the UK's rarest breeding birds, were sighted at Kempton nature reserve. They depend on suitably managed reedbed for their survival, where they can hunt fish at the water's edge. These are just a few of the rarer wildlife sighting on our sites.

Read more about the site enhancements carried out during 2016/17 to encourage biodiversity to flourish, by clicking on the link below:

- [Looking after biodiversity by enhancing our sites \(0.32MB\)](#)

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.



Investing in site enhancements.

During 2016/17, we invested over £700,000 on 31 different projects to improve our sites' biodiversity and access. One of the projects we've now completed has included internal improvements in a disused building at Brasted sewage treatment works to provide access to a local boxing club.

“Thames have gone above and beyond for Kings Amateur Boxing Club, the building is looking amazing and now I am able to carry on ... teaching, encouraging and involving local boys and girls in a great boxing club. Thank you again Thames.”

- *Bill Cooney, Boxing Club Representative*

In order to improve visitors experience on our sites and make them more accessible, we created new footpaths, built more bird hides, installed composting toilets, and erected rebranded signage and interpretation.

Access to our heritage.

London Open House 2016 featured more than 800 buildings, and forms part of our ongoing commitment to open up as many of our sites as we can to the public.

This year we were pleased to welcome nearly 1,900 people to our sites including Abbey Mills, King George V pumping station, Old Ford, Deephams and the historic Oak Room at New River Head, the former headquarters of the Metropolitan Water Board.

We've also been working with the Kempton to Hampton Waterworks Railway Society, to explore the potential of opening a route between Kempton water treatment works and Hydes Field near Hampton, and we're looking forward to progressing this in the coming year.

In April 2016 the Crossness Engines Trust launched their Great Stink exhibition and site interpretation with Sir Peter Bazalgette. We've also supported the London Museum of Water and Steam's electric house project, which has seen electrical items from a number of our sites including Mogden sewage

treatment works and Hampton water treatment works being lovingly restored and displayed. We expect that this exhibition will open later in 2017.

Enhancing our wetlands.

Walthamstow Wetlands - our 211 hectare Walthamstow Wetlands project is now in its final phase of construction, and is due to open to the public in autumn 2017. This Heritage Lottery funded project is a partnership between ourselves, the London Borough of Waltham Forest and the London Wildlife Trust. The new swift tower has been constructed, and the new reedbeds continue to thrive. 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 \(0.37MB\)](#)

Woodberry Wetlands - these wetlands were opened officially by Sir David Attenborough on 30 April 2016, and to the public a day later. The 11 hectare site, which had been closed to the public for nearly 200 years, is being managed by London Wildlife Trust (LWT). Visitors can enjoy a peaceful walk around the reservoir, along a section of the New River, stopping for a coffee at the Coal House café. LWT runs a variety of volunteering opportunities, an education programme and environmental learning events like such as bat walks on site. Since opening through to April 2017 we have had over 60,000 visitors to Woodberry Wetlands. To find out more about this flagship project, click on the link below:

- [Woodberry Wetlands \(0.55MB\)](#)

Award winning fisheries.

Both our Farmoor and Walthamstow reservoir fisheries continue to appeal to a great number of anglers.

Walthamstow reservoirs had 13,000 angler visits during 2016/17 and continued to host a number of high profile angling competitions, such as the British Carp Angling Championships and the UK Carp Competition, as well as providing a venue for a number of carp, bream and roach fishing articles in various angling publications and video. The fishery has adapted well to the improvement works undertaken in preparation for the Walthamstow Wetlands, and there have been opportunities to enhance the angling experience – including easier access to fishing areas, and a fish screen to stop trout migrating between two reservoirs. We made these improvements after consulting our anglers.

Farmoor reservoir received 15,000 angling visits. After hosting the World Bankmaster championships, the reservoir is now a recognised bank fishing competition venue for the UK's largest competitions, and it's 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. We were very pleased that Farmoor was voted in the industry fly fishing awards as the third best stillwater trout fishery in the UK for 2016.

Improving green corridors.

We're working alongside the London Boroughs of Bexley and Newham, and the community charity Groundwork Hertfordshire, to help extend and improve our urban green corridors. This includes the Ridgeway improvement works which began last year – click on the link below to read more:

- [The Ridgeway path improvements \(0.28MB\)](#)

It's important to us that we open up access to our sites, where we're able to, so our customers and the local community can enjoy them. We teamed up with Green Gym, Newham Council and Newham University Hospital to launch a new programme aimed at enhancing health and wellbeing of local residents while also enhancing the environment on a stretch of the Greenway.

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've donated £0.65m to the independent Thames Water Trust Fund. During 2016/17 the Trust approved grants for 1,183 customers who require extraordinary levels of support, with an average value of £221. Our funding also helped fund ten organisations across our catchment area to provide long-term support for customers by providing debt and money advice services.



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. Our employees play a key role fundraising for our principal charity, WaterAid. This year we have raised £350,147 with a further £93,000 of income pledged. Find out more by clicking the link below:

- [Our WaterAid campaign \(0.35MB\)](#)

During 2016/17 our people raised £42,249 for 43 different charities, which also received matched funding of £32,243. This included participation in the MacMillan Cancer Supports World's Biggest Coffee Morning, and Christmas Jumper Day for Save the Children. Our employees also donated £85,062 through our payroll giving scheme, with Thames Water matching this with a donation of £8,506.

We donated £55,783 to 17 charities and community groups via grants which supported our criteria of promoting either 'water and the environment' or 'water and health'. One of the programmes we supported was the Engineering Development Trust's innovative STEM programme, Go4Set, allowing five school teams to participate in the programme. We also helped 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*

About our finances.

We're the UK's largest water and wastewater services provider, serving London and the Thames Valley, with the industry's biggest investment programme. Between 2015 and 2020, we plan to invest over £4 billion in our infrastructure, to further improve our customer service and make our network and delivery of essential services more resilient. Alongside this massive investment, our customers still benefit from the third lowest combined bill in the UK. For just over £1 a day per household, we provide 2.6 billion litres of high quality clean drinking water, and safely remove 4.6 billion litres of wastewater – 24 hours a day, 365 days a year.



To fulfil our commitments to our customers, shareholders, and the environment, our finances require careful management and we take pride in funding our company efficiently and securely. We spend our money in three key areas:

- **Investment** - this is the money we use to renew and improve our network and infrastructure, as part of our record investment programme. This investment is known as capital expenditure or capex.
- **Day-to-day operating costs** - this is the money we use to operate and maintain our network, pay our people, cover our energy costs and pay our technology bills. With a vast network of 140,000 miles of pipes and 449 treatment works, this money is used to help us ensure our business runs efficiently and provides the best possible service for our customers. These costs are known as operational expenditure or opex.
- **Borrowing costs** - we borrow money from banks and other lenders, such as pension funds and insurance companies, to help fund our investment in our network. We keep customer bills low by borrowing debt on as favourable terms as possible, and by spreading the repayment costs over a longer period.

Setting our bills.

Making our bills affordable, while setting them at a level that enables us to meet our commitments, is something we need to get right. We consult with our customers at length about what they value most from us and what they're willing to pay for. We also receive independent challenge from representative bodies such as our customer challenge group (CCG). We continually evaluate what we need to do to maintain and improve our services to customers, and undertake research to understand the future impact of things like climate change and population growth on our network.

Our economic regulator, Ofwat, provides an alternative for competition and sets limits on the prices water companies can charge. Every five years we have a price review where we develop our plans and bills for the next five-year regulatory period, based on our extensive planning and customer research, and agree this with Ofwat.

Most 'bad debt' actually comes from those who choose not to pay rather than those who genuinely can't, and money is added to customer bills to account for it. Following its launch in 2015, we're pleased to see that our award winning debt management team – underpinned by a new system and improved processes – is continuing to drive positive results, including a £14.6 million reduction in bad debt in 2016/17. Fewer refusals to pay mean we have more money to invest in our business for the benefit of all our customers.

We understand the varying personal circumstances of our customers and we are committed to doing what we can to help. We offer support for those who can't afford to pay their bills. We helped 6,161 customers with nearly £4.5 million of debt in 2016/17 through our customer assistance fund. We also help 37,975 customers remain water debt free through our social tariffs – Water Sure and Water Sure Plus.

Bridging the gap.

To support our large investment programme, we supplement the amount we receive from bills by borrowing money at attractive rates. This avoids significant increases to bills during the years we need to make improvements. 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 – which makes our bills fairer and more sustainable.

Explaining our finances.

Our aim is to be transparent and clear when we're explaining our finances. We're aware that not everyone is a financial expert, so we've prepared the three documents below to help explain our performance and how we fulfil our financial responsibilities:

- **The next chapter** - our annual report and financial statements which provides comprehensive detail on all aspects of our financial performance.
- **Our finances explained** - a separate document that provides more detail on how we structure our finances to fund our activities.
- **Our taxes explained** - a document designed to fulfil our commitment to being open and honest with customers, and to explain the taxes we pay in a simple, understandable way.

Borrowing and investors.

In order to ensure our investment programme is affordable for customers, we have to supplement the money we raise from customer bills. We spread the cost of investment in long-term assets by borrowing through public and private debt capital markets or through loans from relationship banks. We're required to pay interest on any amounts we borrow, but our strong investment grade credit ratings mean that we're still able to obtain financing at favourable interest rates.



Managing financial risk.

As with any company, our normal business activities expose us to a variety of financial risks, including changes to inflation and interest rates. By borrowing money from different sources and for varying lengths of time, we can proactively manage and spread these risks, reducing them to an acceptable level. Net debt (the total of external borrowings less cash at bank and in hand) has increased by £596.5 million to £10,749.4 million, as we continue to fund our capital investment programme.

The responsible way in which we operate our finances ensures we maintain a strong credit rating, as assigned by external rating agencies Moody's and Standard & Poor's. The ongoing assessment of Thames Water by these two agencies provides an independent view of our performance and future outlook. Our credit rating is classified by both agencies as being of 'investment grade'.

Equity investors.

We've seen a change in our largest shareholder in 2017. Borealis Infrastructure, the infrastructure investment manager of Ontario Municipal Employees Retirement System (OMERS), one of Canada's largest pension plans, and Wren House, the global direct infrastructure investment arm of the Kuwait Investment Authority, acquired the 26.3% Macquarie-managed stake. All our shareholders are high-quality long-term investors who have long-term visions aligned with ours as we prepare for the future.

Shareholders invest in companies and expect a return on their investment which we pay in the form of dividends. The level of dividend we choose to pay is determined by our operational and financial performance and is not guaranteed. We make sure dividends are set at a level which enables us to continue to meet our obligations, maintain low bills for customers and keep investment at a high level. We made a solid start to the regulatory period, but we didn't pay an external distribution relating to 2015/16 while we supported our tender to award the delivery of the Thames Tideway Tunnel to an independent company. After another year of investing heavily in the business – equivalent to £20 million a week – we made our first distribution of this regulatory period to our external shareholders.

Investing for the future.

We've been investing, on average, over £1 billion a year for the last 12 years to improve our network and future proof our supply for the benefit of our customers today and in the future. We have the largest investment programme in the industry, and we're investing three times more a year than we did during the five years before privatisation.



We finance this investment through a combination of cash flows generated by, and retained in, the business, and by borrowing (debt). Our Regulatory Capital Value (RCV) reflects the investment we've made in delivering water and wastewater services to our customers. At 31 March 2017, our RCV was £12.9 billion (2016: £12.3 billion).

Investing in infrastructure.

Investing in our infrastructure is critical to enable us to reliably serve our customers. With thousands of ageing pipes across our network, improvement can only be made with a regular and targeted programme of investments. Some examples of our investments during 2016/17 include:

- Over £250 million to upgrade our Deephams sewage treatment works to increase capacity and reduce odour
- Our £30 million Axford pipeline near Swindon, as well as the £24 million Angelinos pipeline near Abingdon, and an £8.4 million sewer in Didcot to help local communities
- £6.7 million in a major sustainable urban drainage project for the Nine Elms development in Battersea
- £4.4 million in screens to protect endangered eels from entering our network
- £1.4 million on targeted 'Bin It – Don't Block It' campaigns to help prevent sewer abuse and reduce the likelihood of pollutions

Taxation.

Our capital investment of over £1 billion per year as at 31 March 2017 has resulted in capital allowances, which delay our corporation tax payments. As in recent years, we did not pay any corporation tax during 2016/17. The Government's capital allowances scheme encourages investment in UK infrastructure - if this scheme were not in place, average combined customer bills would be higher.

In 2016/17 we paid around £170 million in taxes, including central and local government business rates, PAYE and National Insurance. Our deferred tax liabilities have reduced by £51.6 million, of which £59.8 million is included in the income statement. This represents a reduction in the level of corporation tax payable in future years and therefore does not constitute a refund from HMRC. Ultimately this will benefit our customers in the form of lower bills in future years.

Profits.

Our profit is the revenue we have left after taking into account all our operational costs and taxes. In 2016/17 our profit after tax (excluding the effects of Bazalgette Tunnel Limited who are delivering the Thames Tideway Tunnel) was £108.4 million, and most of this was retained within the company to support our investment programme.

Operational expenses.

The money we use to operate and maintain our network, pay our employees, cover our energy costs and pay our technology bills, is known as operational expenditure or opex. This money is used to help us ensure our business runs efficiently and provide the best possible service for our customers.

Effective control of these costs is a significant aspect of managing our business responsibly. In the year to 31 March 2017 our net operating costs increased by £96 million (6.8%) from the previous year to £1,515.4 million. £40.6 million of the increase is attributable to higher depreciation and amortisation charges on our operational assets. The remainder of the increase is driven by one-off transition costs associated with our technology and transformation alliance, additional investment in customer service and higher spend levels targeted at a number of key performance commitments.

We operate three pension schemes for our employees – two defined benefit schemes and one defined contribution scheme. During 2016/17, we contributed £6.8 million to the defined contribution scheme. The latest actuarial valuations for the two defined benefit schemes, dated March 2013, have been updated to 31 March 2017. The valuation shows that overall, the net pension deficit has increased by £119.8 million to £379.8 million. A recovery plan is in place based on the actuarial valuation dated March 2013, as agreed between our Directors and the Trustees. Under this plan, additional contributions are made to each of our two defined benefit schemes, totalling around £20 million annually. As part of the March 2016 actuarial valuation, we are engaging with the Trustees to agree an updated recovery plan.

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 in partnership with suppliers and leading academics 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.

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 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 of the future.

Innovation in water.

We want to be more resilient to challenges like 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.



Investigating trunk mains.

We know that trunk main bursts are a concern to our customers and the public, especially after the major bursts in late 2016. 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. In 2016/17 we completed a four year collaborative research programme with the University of Surrey on establishing how corrosion affects the strength of cast iron pipes. We've also found that corrosion on pipes is very variable and difficult to detect, and so we've secured substantial investment in tools to evaluate the condition of pipes. Read more by clicking on the link below:

- [Looking for invisible flaws in our water mains \(0.39MB\)](#)

Smart Water Networks.

Better use of data, especially from our new smart water meters, could transform how we deliver water to our customers. We've been part of a European project called Smart Water4Europe and in 2016/17 we investigated new sensors and algorithms to help tackle leakage, as well as examining how we can better visualise energy use in networks. We're also interested in how our customers can use smart water meter data to help them reduce consumption and bills. We're proud of our involvement in this ground breaking initiative and committed to openly publishing our findings. Find out more on the SmartWater4Europe website [here](#), or by clicking on the link below:

- [Smart Water Networks \(0.29MB\)](#)

Fighting algal blooms.

When algal blooms occur they can block processes in our water treatment plants. This is happening more often, and it's set to get worse with future climate change. During 2016/17 year we continued our important work to see if a filter normally used on a sewage works could be modified to remove algae removal, and the results have continued to impress us. Click on the link below for more details:

- [Algal blooms and climate change \(0.38MB\)](#)

Day to day innovation.

Innovation is often about small improvements that have a big impact. This year we developed our own skimmer blade that attaches to the mechanical excavators that keep our slow sand filters running. It's a small detail, but it has hugely reduced the amount of manual work needed, which in turn has cut the risk of incidents for our people, and makes our cleaning processes more efficient. Read more by clicking the link below:

- [Making maintenance of slow sand filters safer \(0.27MB\)](#)

Looking ahead to next year, we will complete the UK's first condition inspection on a trunk main using leading edge technology that we've sourced from Norway.

We'll also aim to build 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 hope to see results from our increased focus on leakage innovation, including pilots on novel data approaches, satellite detection and acoustic correlators. If these prove successful, we'll deploy them to help reduce our leakage levels.

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 alike.



We need to move to more innovative solutions, because traditional approaches can't always provide long-term and more sustainable answers. We're at a very exciting time when demand for innovation has grown, while new technologies and approaches have become technically and economically feasible. We're driving innovation into our business through laboratory, pilot and full scale testing, and in 2016/17 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
 - 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
 - Infiltration detection and solutions – deploying novel detection methods, treatment solutions and prediction models to create effective and sustainable solutions
 - Fats, oils and grease (FOG) management – enabling FOG interception, collection and extraction to utilise as an energy source and reduce blockages. Read more about this exciting initiative by clicking on the link below:
- [Fats oils and grease - from nuisance to energy \(0.32MB\)](#)

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 a recently discovered bacteria called Anammox which has the potential to revolutionise nutrient removal. Click on the link below to read more:
- [Anammox bacteria for next generation ammonia removal \(0.39MB\)](#)

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
 - Advanced energy recovery – we're demonstrating the benefits of pyrolysis as an alternative to our sludge powered generators in east London
 - 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. Learn more by clicking on the link below:
- [Thermal Hydrolysis Process THP \(0.42MB\)](#)

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.



Engaging with customers.

We have a responsibility to make sure we provide a more sustainable service for our customers in the future, and we're actively engaging with them now to improve their experience of being with Thames Water. We've introduced analytical tools to help us see and understand what our customers think of us when they use social media and other services like our website and phone line. All this information gives us valuable insights into what our customers expect from us, and helps us shape our future customer service strategy. Read more by clicking on the link below:

- [Engaging our customers \(0.35MB\)](#)

Non-household retail market.

On 1 April 2017, the competitive retail market in the water industry for non-household customers opened. This means every business customer, from a small hairdresser to a large supermarket, can now choose which retailer they buy their water and wastewater services from. A variety of retailers now provide business customers with their billing, customer service and efficiency advice. Meanwhile, in our area, we're continuing to supply their water and sewerage services and manage our infrastructure.

We decided not to continue providing retail services in this new market. This will allow us to focus all our energy on delivering excellent water and wastewater services to all our customers, and providing retail services to household customers, who continue to see improvements in the service we deliver. The new market is also a good opportunity for non-household customers, who make up five per cent of our customers, to choose a retailer that specialises in providing business retail services.

We worked hard to be ready for market opening - reviewing, developing, testing and implementing new systems and processes, as well as recruiting employees with special skills so we can operate as a wholesaler in the market. In the run-up to market opening, we transferred our retail services to Castle Water, to help us provide a seamless service for customers. We also worked across the industry with Defra, Ofwat, Market Operator Services Limited (MOSL) and other water companies to make the market opening a success.

Customer service strategy.

We need to provide our customers with top quality drinking water at all times - as well as take away wastewater, treat and return it safely back into the environment. We've received clear and consistent messages from our customers about the things that matter to them, and the specific areas they'd like us to focus and improve on.



This valuable information and feedback helps us shape our customer service strategy to make sure it's reliable, affordable and effortless. Here's what our customers say they want from us:

1. 'Make the contact easy and so I only need to ask once'
2. 'Faster resolution that is done right first time'
3. 'Keep me informed of progress and when it's resolved so I don't need to chase'
4. 'Let me know in advance if something is going to affect me'

Customer experience programme.

Over the next two years, our Customer experience programme will deliver key tools and capabilities so that we can provide a consistent and effortless experience for our customers. It focusses on four core workstreams:

- Operating model – the right structure, systems, and people with clear vision to drive 'right first time' resolution, and manage the end to end journeys for our customers
- Channel strategy – helping customers to self-select the way they wish to interact with us and make it easier for them
- Incident management – transforming our proactive capability with the flexibility to cope with peaks in demand, and putting customers at the heart of our response
- Insight – understanding and measuring our performance in the way that the customer experiences it to help us continually evolve

Improving our service.

We've been focussing on making great improvements to our customer service, and last year we set the foundations for the next phase of customer service strategy.



Our customer improvements.

During the year we took our first steps towards developing incident management. A new team has been set up to respond to our customers' needs during events like serious burst water mains or flooding. There is a dedicated event manager for every issue to make sure that our customers' requirements are at the heart of everything we do.

Our website has been moved to a new platform, with further improvements scheduled, making it easier for our customers to navigate and understand. We've also extended our services on social media as customers are using newer and quicker ways to communicate with us and let us know where our service can be improved. We now offer customer service on social media 24 hours a day, seven days a week and 365 days a year. We received 94,001 messages via social media in 2016/17, including revenue and operational queries, feedback, complaints, media enquiries and more. For more details, click on the link below:

- [Our social media customer service \(0.36MB\)](#)

We've successfully introduced a new Customer Solutions Centre for our wastewater business, which launched in May 2016. It brings together our expert customer service teams from Thames Water and our contractors Lanes in a highly sustainable new building. Our planning, scheduling and customer assurance services work closely with our field teams to deliver brilliant customer service and more first-time solutions for our 15 million wastewater customers. All this offers a new way of working, reducing frustrating hand-offs between departments, and making sure our customers are well looked after throughout their journey.

Since our Customer Solutions Centre was set up, we averaged 4.65 out of 5 during 2016/17 on our weekly internal customer service tracker, compared to 4.34 out of 5 in 2015/16. We've also improved our position in the Service Incentive Mechanism (SIM) industry league tables for wastewater services this year, to sixth from ninth position compared to the other water and sewerage companies.

Our transformational journey.

We still have work to do to make sure that customers whose issues can't be resolved first time are nevertheless receiving an effortless and dependable service. Our focus for this coming year is to re-engineer the way we plan and deliver solutions for customers who need more work to get their issue resolved. We'll ensure that customers are proactively kept up to date through their journey, and that we resolve their issues in a more timely fashion, with fewer and less disruptive visits.

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, social tariffs, and reducing bills for those on a low income.



Our assistance schemes include [Customer Assistance Fund](#), [WaterSure](#) and [WaterSure Plus](#) to help our most disadvantaged customers. We want to do more to make our customers aware of these schemes, and we'll continue to look for even more opportunities to support anyone with debt issues and make it as easy as possible for them to get help from us.

Customer Assistance Fund.

Our Customer Assistance Fund can help customers who genuinely cannot pay their bills. During 2016/17, we've helped 6,161 customers with an average support payment of £724.

We've provided £4.4m towards this fund, and we've also donated an additional £0.65m to the independent Thames Water Trust Fund. In 2016/17 the Trust approved grants for 1,217 customers who require extraordinary levels of support, with an average value of £293. Our funding has also helped fund nine organisations across our catchment area, providing long-term support for customers with debt and money advice services.

Our WaterSure scheme.

We've now helped 7,098 customers through our WaterSure scheme. This scheme helps those who receive specific means-tested benefits in a household with a metered water supply. It's designed to help households where someone has a verifiable medical condition which requires a lot of water, or those with a large family who receive child benefit.

WaterSure Plus tariff.

As well as helping low income households by providing a free benefit entitlement check, we also helped 30,877 customers through our WaterSure Plus social tariff during 2016/17. This scheme,

which was introduced in 2014, gives a 50 per cent discount on bills for our most vulnerable customers.

Qualifying households must include someone who receives one of the means-tested benefits specified in the criteria for the WaterSure scheme – alternatively, the household should be receiving a gross household income below a defined threshold. The customer's annual water charges must also exceed 3 per cent of the household's total net income.

Taking extra care.

We provide free extra support to 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 2016/17, we helped over 57,000 households who needed assistance because of disability or other personal circumstances, and who are listed on our special assistance register.

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

More information can be found at: [thameswater.co.uk/extracare](https://www.thameswater.co.uk/extracare)

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. Our SIM performance has continued to improve with our best ever performance this year of 77.26 points, compared to 76.74 out of 100 in 2015/16.

We've made good progress here, but we know we need to go much further. We've set ourselves challenging targets against the SIM, which reflect our commitment to making sure our customers get the quality of service and value for money they're entitled to expect. Read more by clicking on the link below:

- [SIM explained \(0.27MB\)](#)

Getting it right.

During 2016/17 we achieved our best ever performance for resolving written complaints, with 94.35 per cent being resolved after the first complaint. This was reflected by a 24 per cent reduction in the total number of escalated written complaints, with only one complaint from our 15 million customers needed to be investigated by the Consumer Council for Water.

We've seen a reduction of 44 per cent in the total volume of written complaints (household and non-household) which we've received over the past five years, and we expect to see this trend continue next year. Although written complaint volumes were higher than 2015/16, this was still our second lowest annual total. We recognise there's still more to do, and we're confident we will continue to build on this success.

| SIM performance | 2015/16 | 2016/17 | Variance (%) |
|---|--------------|--------------|--------------|
| Total written complaints | 14,242 | 17,809 | -23 |
| Second stage written complaints only | 1,332 | 1,007 | 24 |
| Complaints accepted by the Consumer Council for Water | 3 | 1 | 67 |
| Unwanted telephone contacts | 499,337 | 511,792 | -2 |
| Customer satisfaction score | 4.10 | 4.12 | 1 |
| Total SIM points | 76.74 | 77.26 | 1 |

Improving customer satisfaction.

We're also continuing to improve our performance in our customer satisfaction score, which increased from 4.10 in 2015/16 to 4.12 out of five in 2016/17. We've seen very positive improvements following the introduction of our wastewater Customer Solution Centre, with scores improving every quarter to a final score of 4.34.

Issues with burst water mains and leakage investigations during the winter months have had a negative impact on our water scores, but they've helped to highlight the work we need to do to help our customers during these times. We've been unable to improve our revenue customer satisfaction by as much as we would have liked, and we're working to improve the stability and performance of our systems to be able to do this. 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've developed another suite of measures alongside SIM to demonstrate our intentions and measure the services we provide for our customers. These 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, click on the link below to read our 2016/17 annual performance review.

- [Here for you - Annual performance report 2016-17 \(2.60MB\)](#)

A precious resource.

We supply an average of 2.6 billion litres of safe high quality drinking water to around nine million people across London and the Thames Valley each day. 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.



A resilient water supply.

Water is vital for everything we do at home, work and play. It's essential that we can continue to meet the needs of people, businesses and the environment today and in the future, so this means balancing supply and demand.

We're actively managing demand through leakage reduction, metering and water efficiency. However, we believe additional water resources will also be required in the future, and we're exploring available options.

Testing the quality.

To make sure our water quality remains among the best in the country, we carry out 475,000 regular quality tests at all stages from source to tap, achieving 99.96 per cent compliance.

Leakage.

Disappointingly, we weren't where we wanted to be at the end of 2016/17. Our leakage has increased by 5% since last year from 642MI/d to 677MI/d and we will incur an outcome delivery incentive ("ODI") penalty of £8.6 million, which will be returned to customers in the form of lower bills from 2020.

Metering.

Meters put our customers in control of their water usage and bills, and also help us manage supplies much more efficiently. We've started rolling out smart enabled water meters to all homes across our region. Last year we fitted over 166,000 new and replacement meters. This helped us to save four Olympic-sized swimming pools worth of water a day by finding and fixing leaks, and it also helped our customers to reduce their water usage.

Testing the quality.

Our drinking water quality remains among the best in the country. In 2016/17 we continued to provide industry-leading drinking water quality, passing 99.96 per cent of tests against stringent UK and European standards. To maintain our high standards, we carry out thousands of tests on water samples routinely collected from our treatment works, service reservoirs and randomly selected homes and businesses.



Clean and safe drinking water.

Last year we provided an average of 2.6 billion litres of drinking water to our customers every day. This water was sourced from rivers and boreholes, treated at one of our 98 operational 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 compliance. We test 39 different parameters which are used to establish the quality of water throughout our area of supply. We carry out 475,000 tests a year on water samples from source to tap, to ensure our water quality remains among the highest in the world.

Maintaining excellence.

To maintain our high standard of drinking water quality compliance, we've continued to focus on identifying areas within our water network where the number of lead pipes remains high. Once identified, these pipes can then be removed through a targeted programme of replacement. We plan to replace 35,000 pipes in the next three years.

The number of customer contacts we receive related to drinking water quality continues to remain well below water industry averages, but we recognise that we can still do more. We're now beginning to see the benefits of the work we developed in 2015 - a number of measures to improve the condition of some of our underground service reservoirs and ensure they continue to surpass regulatory requirements. These included:

- Proactive remedial work on service reservoirs
- Replacing sample taps

- A range of measures to improve the circulation and turnover of water within a small number of our reservoirs

Catchment management.

During 2016/17 we've continued to explore more sustainable ways to reduce the amount of pollutants, such as pesticides and nitrates, which enter the rivers and groundwater sources in the catchments where we get our water. This 'catchment management' approach aims to improve raw water quality and lessen the impact of pollutants on our water treatment processes.

We've identified a number of 'hotspot' areas with elevated concentrations of these pollutants, and have been running trials to assess different options for reducing run-off from agricultural land. These include changes to drainage through ditches and ponds, and working with farmers to reduce the amounts of pesticide they use. By tackling the problem of pollution at source, we aim to avoid the need for additional water treatment which would impact on the environment and our customers' bills.

A resilient supply.

A safe and secure water supply is vital for everything we do at home, work and play. Most of us don't think about our water supply, because it seems to always rain in England. But London actually receives less rain than Madrid, Dallas and Istanbul.



Our water supplies are under increasing threat from climate change, rapid population growth and environmental pressures, all of which are creating a growing gap between supply and demand for water. Without action, we forecast a water deficit in our region of over 370 Ml/d by 2045, equivalent to the water needs of approximately 2.5 million people. We need to plan properly now to ensure we can continue to meet the needs of people, businesses and the environment, today and in the future.

What are the options?

Managing demand for water is the foundation of our plan. This involves further reducing leakage, promoting the installation of smart meters to all households, and increasing our water efficiency programme.

We will also need to develop new sources of water. There are several ways we can boost our water supplies, and we have a detailed programme of work examining a wide range of options, which include:

- **Transfer of raw water** - moving water to the South East from other parts of the UK
- **New storage reservoir** - water is abstracted during times of high flow and is stored in a reservoir until it's needed
- **Desalination** - saltwater from the Thames estuary has its salt removed and is treated to make it suitable for water supply
- **Water reuse** - using treated wastewater effluent from sewage treatments works for drinking water supply
- **Innovation** - we're also considering more innovative approaches such as dual supply systems to serve new housing development

Identifying the best options.

While cost is an important factor in determining the right options, we also need to consider other factors - like environmental and social impacts, flexibility and resilience to cope with future changes,

and opportunities to deliver wider benefits for society. Click on the link below to see how we are identifying the best options through our adaptive pathways approach:

- [A resilient water supply - adaptation pathways \(0.45MB\)](#)

Understandably, there's a lot of interest in this work, and we're actively engaging with stakeholders and customers as we develop our plans to ensure we understand their views and priorities, and take them into account where possible.

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 our next plan, we will set out a comprehensive solution to these challenges. 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'll publish our draft plan in January 2018 for everyone to provide feedback. [Click here](#) for more information on our water resource management plans.

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 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 (such as hosepipe bans) 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.

For our supply area of London during 2016/17, we dropped one point against the maximum SoSI score of 100. This means we may need to impose restrictions on water use slightly more frequently

than our planned level of service. For our supply areas outside London, there are sufficient water supplies to meet our planned levels of service.

To balance our supply and demand, we set ourselves challenging leakage targets which would have seen us reducing leakage to the lowest levels ever. Unfortunately, we weren't able to achieve our targets, and as a result, demand for water has been higher than planned.

Our look forward.

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 our next plan, we will set out a comprehensive solution to these challenges. 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'll publish our draft plan in January 2018 for everyone to provide feedback. [Click here](#) for more information on our water resource management plans.

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 2016/17, we achieved 99.93 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:

| | 2012/13 | 2013/14 | 2014/15 | 2015/16 | 2016/17 |
|---------------------------------------|---------|---------|---------|---------|---------|
| Daily abstraction per cent compliance | 100.00 | 99.91 | 99.89 | 99.85 | 99.93 |

Our partnership approach.

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

Our joint approach starts with an initial investigation to understand the conditions in a river. If this shows 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.

In March, we completed a project that allows us to stop abstracting water from our source at Ogbourne, Wiltshire, and reduce abstraction from our nearby groundwater source at Axford. The £30 million Axford project involves 18km of pipeline to transfer water from north of Swindon to the south. The project will help protect the River Og and River Kennet, a Site of Special Scientific Interest. Find out more by clicking on the link below:

- [Axford and Ogbourne pipeline - licence reduction \(0.45MB\)](#)

Last year we installed an eel screen at our large intake where we abstract water from the River Thames at Walton. 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:

- [Walton eel screens \(0.42MB\)](#)

In the past we've investigated the effect of our abstractions from the River Thames on the river and 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, impacting the aquatic life in the river. We're now looking at measures which we can implement to mitigate this impact by increasing the level of oxygen in the effluent from Mogden sewage treatment works.

Our future plans.

Building on work which we completed in 2014/15, we'll be implementing the following measures at three of our sites:

- At Pann Mill we've agreed with the Environment Agency that we'll reduce the abstraction licence in 2017/18 and transfer part of it to another source near the River Thames.
- At Childrey Warren we'll close this source to provide a sustainable solution for the Letcombe Brook. An allowance for this will be included in our Water Resources Management Plan 2019 (WRMP19).
- At our abstraction source at Waddon in South London, we're carrying out an options appraisal to assess potential solutions to low flows on the River Wandle which will be completed at the end of 2017.

In 2015 we started investigations into the impacts of abstraction on the Lower River Lee and the River Chess at Chesham, to see if our abstractions are having an adverse impact on the environment. Last year we also started similar investigations on the Upper River Darent and the River Cray. We're aiming to complete these investigations by the end of 2017.

Managing leakage.

The challenge.

The reduction targets we set ourselves are intentionally challenging, reflecting just how seriously we take leakage. During the last year we've seen a series of major bursts on some of our Victorian water pipes, which didn't just affect customers in London but also contributed to us missing our leakage target. Some of the major bursts are due to failure of ageing pipes which simply need to be upgraded – we have a programme in place to achieve this. However, most leakage actually comes from leaks below the ground that we can't see and are more difficult to locate and repair.

Managing leakage is an important part of our plans to manage the demand for water, and it remains a key priority for us. Before we look to create additional water supplies, it's essential for us to manage what we already more effectively have through demand management. Leaks are inevitable on a network of our enormous size and age, but it's vital we invest wisely to reduce this and to improve our resilience. In line with our 2014 Water Resource Management Plan, we have ambitious plans to reduce leakage by 59 megalitres/day (MI/d) between 2015 and 2020.



How are we doing?

We set ourselves challenging targets for this five year regulatory period, because we know it's very important to our customers and the environment. Between 2004 and 2015/16 we reduced our leakage by a third.

Disappointingly, we weren't where we wanted to be at the end of 2016/17. Our leakage has increased by five per cent since last year from 642MI/d to 677MI/d, and we will incur an outcome delivery incentive ("ODI") penalty of £8.6 million which will be returned to customers in the form of lower bills from 2020.

Next year's target is tighter, and we're committed to a recovery plan aimed at bringing us back on track with our leakage targets by the end of the regulatory period.

Getting back on track.

Some of the major bursts we saw last year were due to fragile, ageing pipes which simply need to be upgraded and we have a programme in place to achieve this. We've committed to increasing our

investment in 'trunk' mains replacements by £97 million over the next three years to reduce the likelihood of these devastating events. We are also investing company-wide in our emergency responses, to provide our customers with the support and reassurance they understandably expect.

However, most leakage actually comes from leaks below the ground that we can't see and are more difficult to locate and repair, especially under busy streets. Only two per cent of our total leakage is visible above ground. In addition, 28 per cent of total leakage from the 31,000 kilometre network is customer side leakage (on privately owned pipes), which is why we offer to fix those leaks for free.

We're trialling a raft of new technologies to improve our performance and reduce our susceptibility to extreme weather. Approximately 103,000 smart meters have been installed which helped our region save 4.7 million litres of water in 2016/17 through identifying leakage and reducing customers' consumption. Read more by clicking on the link below:

- [How smart meters are helping us tackle leakage \(0.25MB\)](#)

Communicating with customers.

To help us get quicker at finding and fixing leaks, we need to help our customers report those leaks to us more easily – after all, the faster we find out about them, the more water we can save.

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 meter our water network in a range of different ways to help us manage our projected shortfall in supply, and we're aiming to fit meters at all customers' homes between now and 2030 through our progressive metering programme. 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-revenue meters on pipes which feed large buildings, to help us find leaks as part of our bulk metering programme.



Progressive metering programme.

Our progressive metering programme aims to fit smart meters at all customers' homes between now and 2030, starting in London. We started a trial in 2014 before rolling out our programme fully in 2015/16. Last year, the team installed over 103,000 smart meters across eleven London Boroughs - Bexley, Enfield, Greenwich, Islington, Camden, Waltham Forest, Lewisham, Haringey, Brent, Bromley and Hackney.

This compulsory programme is a vital part of our plan to bring supply and demand into line in the future. Our forecasts show that if we do nothing and continue as we are, there will be a shortfall of 130 million litres of water per day by 2025. That's enough water to supply 850,000 people.

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. Last year almost 20,000 customers had a meter fitted via this route.

Replacing existing meters.

When meters reach a certain age, or become faulty, we replace them. Last year we replaced over 42,000 existing meters across the region. Now, whenever we replace an existing meter in London, we upgrade it to a smart meter.

Bulk metering programme.

We also fit larger meters called 'bulk' meters to spot leaks on large private supply pipes which can serve many buildings or properties. By measuring how much water is used in an area, we can more accurately track how much water is being lost through leaking pipes. This will help us to stop water being wasted and plan necessary future investment. Our bulk meters identified 4.6 megalitres of water a day that was being lost through leaking pipes last year.

Metering for our customers.

We realise that for some customers getting a meter is a big change in how they pay their water bill. Every day we're talking to thousands of customers on their doorstep, on the phone, or through our information leaflets about metering and answering any questions they may have. Last year alone, we had conversations with over 136,000 customers on the doorstep.



Customers in control.

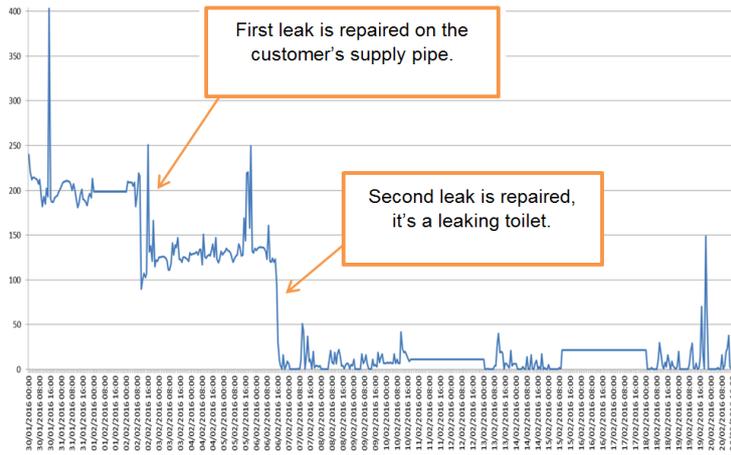
Every one of our customers who gets a new meter as part of our progressive metering programme has an adjustment period before being switched on to a metered bill. During this transition period, we provide regular information to help our customers understand the comparison between their current charges and what they'll pay when they switch to a metered bill. Households who find that they'll be better off on a metered tariff can opt to switch over at any point in the transition period. For households who find that their metered bill would be higher than their current bill, we'll provide support and practical advice to help them reduce their water use. To protect customers who are struggling to pay, we have a number of measures in place. Take a look at our schemes in [Keeping things affordable](#).

Last year approximately 64,000 customers started their adjustment period, and around 7,000 have already switched to a metered tariff. Customers are using our online portal to understand their water usage with the 'my usage' page receiving over 12,500 hits last year. Click on the link below for more details:

- [Metering - securing future water supplies \(0.29MB\)](#)

Fixing customer side leaks.

Our smart meters are helping us pinpoint leaks on customers' pipes more accurately than ever before. The data they collect alerts us to continuous flow, which is where the flow doesn't drop to zero over a sustained period of time, indicating that there could be a leak. So far we've fixed over 800 leaks for free on customer supply pipes found through the progressive metering programme.



Daily meter data and the impact of repairing two leaks at a property

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 efficiency is an essential part 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 for households, businesses, schools, local authorities, housing associations. 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're continuing to encourage our customers to save water, energy and money – saving nearly 12 million litres of water a day during 2016/17, based on Ofwat assumed savings methodology.



Leading by example.

We offer our customers a range of free water-saving products and tailored advice to help them save water, energy and money. As well as advising our customers, we've also looked at our own water use to see where we can make savings. We've reduced our water consumption of around 50 per cent by installing 1.5 litre air flushed toilets, sensor taps and replacement urinals in our largest office buildings. Find out more by clicking on the link below:

- [Thames Water toilet refit - making our own toilets more efficient \(0.28MB\)](#)

Helping customers save.

In-home and business retrofits.

Our award winning in-home retrofit initiative combines free water saving device installations with tailored water saving advice. We delivered over 60,000 Smarter Home Visits (SHV) in 2016/17, and installed over 200,000 water and energy saving devices. Following a small pilot project, we're increasing our water efficiency efforts with our Smarter Business Visits (SBVs) by fixing internal leaks (wastage), converting WCs to dual-flush and installing urinal controls. Click on the links below to read more:

- [Smarter home visits \(0.42MB\)](#)
- [Smarter business visits \(0.29MB\)](#)

Long term behaviour change.

Our water efficiency communications aim to raise awareness of why we all need to save water and to help drive uptake of our water efficiency programmes and tools. In autumn 2016, we trialled our Be Water Smart water efficiency education campaign in Oxford, to help raise awareness of the local water issues faced with the message 'more people, less water to go around'. Find out more by clicking on the link below:

- [Oxford water efficiency campaign \(0.29MB\)](#)

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 determine their water consumption, associated water and energy costs, and 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.

Research and innovation.

We worked with University College London and London Sustainability Exchange on an industry leading and award winning multi-faith research project about faith and cultural water use. We researched attitudes to water and water efficiency in five London faith communities, and we're developing this research further with a second study looking into water reduction campaigns for different community groups.

Following a collaborative UK water sector research project, and parallel Thames Water initiative, our focus on internal leakage (wastage) has increased. Leaky loos are one of the most common causes of high water use, wasting between 200 and 2,500 litres per day, and often more than doubling a metered water bill. We delivered over 6,000 free wastage fixes last year. Click on the link below for more details:

- [Leaky loos and household wastage \(0.22MB\)](#)

We're piloting an Incentive scheme in Reading to assess the effectiveness of rewarding customers with points every time they save water and engage with the web platform. Developed in partnership with Green Redeem, a recycling reward specialist, this initiative lets customers use these points on vouchers, entry into prize draws and more. Find out more by clicking on the link below:

- [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 both wildlife and people. ARK supports our water saving campaign by offering free 'Water Matters' activities and projects for schools and community groups in Reading, Newbury and Marlborough areas. Click on the link below for more information:

- [Our partnership with Action for the River Kennet \(0.46MB\)](#)

We're working with local authorities and housing associations to promote water efficiency advice to their residents. We provide our free water efficiency devices in their home visits programmes, with access to our specialist water and energy saving app. We're carrying out a trial project delivering 'water and energy save visits' for residents in London with the housing provider, London and Quadrant (L&Q). For more details, click on the link below:

- [Helping housing association residents save on water and energy \(0.44MB\)](#)

Our water efficiency schools programme is one of the UK's largest schools education programmes for water efficiency, running across 50-80 schools each year. Over 5,000 students have taken part in our schools programme during 2016/17. Learn more by clicking on the link below:

- [Water Efficiency Schools Programme \(0.45MB\)](#)

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 6 water companies in the south east. We are helping promote and create a water saving culture in the South East of England with the innovative #Thinkwater campaign.

Award winning ideas.

Our efforts to improve the quality and increase the quantity of our water efficiency delivery were rewarded in 2016 with four national awards. Our Smarter Home Visit programme won three awards: the Water Industry Achievement Award for Water Resource Management Initiative of the Year, the UK Water Efficiency Award for Built Environment, and the UK Customer Experience Award for Utilities and Team - Customer at the Heart category. Our Smarter Home Visits were also shortlisted in the Sustainability Leaders Awards and the Utility Week Awards. Our bathroom refurbishment research and large scale rollout with Thames office buildings won the Institution of Civil Engineers Sustainable Water Management Award.

New resource options.

Active management of supply and demand through leakage reduction, metering and water efficiency will remain the foundation of our plans to manage future water supplies, but this won't be enough. We'll need to develop new sources of water to make sure we have a resilient and sustainable supply which can meet the demands of the growing population in London and the south east, ensure the region is prepared for a changing climate, and support growth.



What are the options?

There are several ways we could boost our water supplies, and we have a detailed programme of work examining a wide range of options, including:

- **Transfer of raw water** - moving water to the South East from other parts of the UK
- **New storage reservoir** - water is abstracted during times of high flow and is stored in a reservoir until it's needed
- **Desalination** - saltwater from the Thames estuary has its salt removed and is treated to make it suitable for water supply
- **Water reuse** - using treated wastewater effluent from sewage treatments works for drinking water supply
- **Innovation** - we're also considering more innovative approaches such as dual supply systems to serve new housing development

Identifying the best options.

While cost is an important factor in determining the best options, we also need to consider other factors like environmental and social impacts, flexibility and resilience to cope with future changes, and opportunities to deliver wider benefits for society.

Understandably, there's a lot of interest in this work, so we're actively engaging with stakeholders as we develop our plans to ensure we understand their views and priorities, and take them into account where possible.

We believe that we'll need to develop new sources of water, but it's also essential for us and our customers to manage our current resources more efficiently and effectively. We're continuing to install meters across our region, which will provide our customers with essential information to help them to understand their water usage, and encourage them to use water efficiently. This will also provide us with vital information to understand and manage our network efficiently, including pinpointing and tackling leakage. Taking this step change in information availability will help drive innovation and new opportunities across the sector.

In our next Water Resources Management Plan (WRMP), we will set out a comprehensive solution to the challenges we face, including population increase and climate change. 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'll publish our draft plan in January 2018 for everyone to provide feedback. [Click here](#) for more information on our water resource management plans.

Ensuring responsible operations.

For us, operating responsibly means engaging positively with our customers and communities and being good neighbours. Over 100 of our sites across London and the Thames Valley have some form of public access and we continue to manage recreation and biodiversity positively. We have a programme in place to put these sites to the best possible community use, including bird watching, fishing, sailing and walking.



In 2016/17 we've continued to reduce the impact to our customers and communities from our street works 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 street works can sometimes have on communities, commuters and local businesses. Through our industry leading Infrastructure Alliance we're continuing to transform the way we work. Last year we won Gold in the City of London Considerate Contractor Streetworks Scheme 2017 awards.

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 3,911 streetworks notices, of which 3,759 were for planned works and 152 were for emergency works. We're committed to a programme of upgrading our networks and reacting quickly to fix our pipes when we have a blockage in a sewer pipe, or when we have a leaking or burst water pipe.

Considerate ways of working.

We're passionate about reducing the impact our work can have on our customers across our region. We undertake approximately 60 per cent of streetworks across London, so we're seen as one of the industry leaders in our approach to streetworks excellence and the impact of works. Consideration for co-operative working is commonplace, and we often share work sites and traffic control with other partners in order to minimise impact on the area. We're committed to building good working relationships with Transport for London, local authorities and other stakeholders who are affected by our work.

In the last year we've won a Gold Award in the City of London Considerate Contractor Streetworks Scheme 2017 awards. This is the fifth year in a row we've won the award, with judges noting how our workers take pride in the jobs they are completing and their awareness of the passing public and the environmental impact on the community. We won the Gold Award for continued good performance and good communication when we were working within the City of London.

We have a responsibility to lead by example, and be proactive in working with Local Authorities. One of the aspects of being a responsible utility company is respecting 'quiet time' in the City. This is where any noise needs to be kept to an absolute minimum, in order to prevent inconvenience to companies and residents in the surrounding area. Often, this means working longer hours or at weekends to minimise traffic issues and impacts on our neighbours.

Managing our odour.

Our sewage treatment works and pumping stations can sometimes produce odours. We want to reduce the potential for this odour disrupting the communities in which we operate. We have committed to our regulator, Ofwat, to reduce the number of properties affected by odour by 6,593 by 2020.



What's the problem?

Historically our operational sites were normally located 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 originally designed and built to be free from odour. Unfortunately this means that no matter how well we manage and operate our sites, some properties can still be affected by odour.

We continue to reduce odour as much as we can by focussing improvements on particular parts of our sewage treatment works - for instance, by installing aeration lane covers as shown in the image above. This targeted approach helps make sure we're installing tailored solutions as efficiently as possible.

How are we doing?

Our performance on reducing odour is improving thanks to the introduction of odour management plans, new odour abatement equipment, and performance tracking. Completing a number of major odour mitigation projects means we're on track to meet our performance commitment to Ofwat. A range of activities have contributed to our management of odour, including:

1. Maintaining odour critical equipment and ensuring that our day to day operations minimise odour emissions. This includes undertaking maintenance and improvements at a number of treatment works and pumping stations as part of compliance with current best operating practices for odour management.
2. Investing in reducing emissions at Deephams, and five other sewage treatment works close to residential properties.
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 odours.

Sewage works upgrades.

We're continuing to improve our sewage treatment work performance and in 2016/17, we made further odour mitigation improvements at two sewage works in Aldershot and Esher - for example, installing and replacing odour control units, and improving our storm tank cleaning systems. This work has led to a reduction of 1,305 properties being affected by odour as assessed through odour modelling.

Our major upgrade of Deephams sewage treatment works, involving 500 construction workers, will take this one step further, with an expected reduction in a further 3,850 properties being affected by odour. This £250 million plus upgrade will be completed in 2018, and it's designed to increase the capacity of this major treatment works from 887,000 people to almost 990,000. In recognition for the way we limited local disruption, the scheme won two national Bronze awards as part of the Considerate Constructors Scheme. For more details, click on the link below:

- [Deephams sewage treatment works upgrade \(0.39MB\)](#)

Addressing climate change.

The projected impacts of climate change across London and the Thames Valley will compound a difficult situation where 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 a reduction in our greenhouse gas emissions ('mitigation'), is essential if we are to manage the challenges that climate change represents.



Our response to these challenges 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. Click on the links below to read more:

- [Our climate change policy 2017 \(0.30MB\)](#)
- [Our sustainability policy 2017 \(0.29MB\)](#)
- [Our environment policy 2017 \(0.25MB\)](#)
- [Our biodiversity policy 2017 \(0.35MB\)](#)
- [Our corporate responsibility policy 2017 \(0.20MB\)](#)

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 on an almost weekly basis. As a result, we're concerned about the future impact of weather and climate change on our business and its implications for customer service.



The impacts of climate change may often seem a long way off, but in simple terms it's 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 impacted on our ability to deliver our service to our customers, including:

- 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 (see table below).

| Performance and commitment code | Performance commitment | Amount of customer service with additional flood resilience | 2020 target |
|---------------------------------|--|---|-------------|
| WB8 | Increase flooding resilience of water service – we will improve our ability to continue to supply customers with | Megalitres per day | 1015 |

| Performance and commitment code | Performance commitment | Amount of customer service with additional flood resilience | 2020 target |
|---------------------------------|---|---|-------------|
| | clean water during flooding events | | |
| WC2 | Reduce leakage | Megalitres per day | 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 | 1,700,000 |
| SB5 | Hectares disconnected from mains drainage (twenty4twenty) | No. Hectares | 20 |

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

We've improved our weather resilience by using models and Met Office data to monitor rainfall and the potential impact on our wastewater network. We use this information to support real-time operational management decisions, plan the resources we need and help our investment decisions. We call this 'storm chasing' – to find out more, click on the link below:

- [Proactive catchment management - storm chasing \(0.41MB\)](#)

We've also produced a short report and a number of illustrative case studies which describe our progress between 2010 and 2015, together with our goals for 2020. Click on the links below to read the report and case studies:

- [Thames Waters progress in planning for climate change \(1.09MB\)](#)
- [Thresholds and monitoring \(0.04MB\)](#)
- [Supply chain \(0.11MB\)](#)
- [Delivering flood alleviation in partnership - Herne Hill \(0.19MB\)](#)
- [Water resource planning \(0.29MB\)](#)

- [Biodiversity assets and climate change \(1.59MB\)](#)
- [Planning for flood resilience \(0.48MB\)](#)
- [Preparing for wet weather \(0.41MB\)](#)

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 48 per cent reduction for our scope 1 and 2 emissions^{**}. Excluding the purchase of renewable electricity, this year we achieved a 24 per cent reduction in our GHG emissions*, a significant improvement on last year's 19 per cent.



Different types of emissions.

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

1. **GHG emissions associated with the operation of our assets** - these are under our control and we take action to reduce them by becoming more energy efficient, using less energy and generating 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 48 per cent reduction, we need to continue 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.

What we're doing.

We've set ourselves the challenging voluntary target of reducing the amount of electricity we import from the grid, by sourcing 33 per cent of our electricity from embedded renewables by 2020. This will help mitigate against climate change and energy consumption pressures on our operations due to increasing population and higher wastewater treatment standards.

In 2016/17, we generated 20.1 per cent (261 GWh) of our own electricity needs from renewable sources including sludge treatment, wind and solar photovoltaics (PV). We sourced a further 3.1 per cent of our electricity requirements from other embedded renewables.

Generating low carbon renewable electricity is key to our plans to reduce our emissions. During the

year, we commissioned 18.5 MW of renewable generation capacity. This enabled us to generate 255 GWh of our own renewable electricity from sludge (including biogas) as a fuel, an increase of 45 GWh from last year.

In addition to the renewable electricity we generated, we also increased our renewable heat energy by 12.4 GWh, a 12 per cent increase on the previous year, helping to reduce our reliance on gas oil and natural gas.

Where we're not able to source our own renewable electricity, from October 16, we started sourcing renewable electricity through a contract with Haven Power[#].

Despite a range of energy efficiency initiatives, the total electricity we consumed to pump and treat water and sewage last year increased by 5 GWh to 1,299 GWh. This is largely because in 2016/17 we supplied over 14,000 megalitres (1.5%) more water than in 2015/16.

**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 governments REGO (renewable energy guarantee of origin) accreditation scheme to demonstrate the electricity we consume is from a renewable source.

Greenhouse gas emissions.

Our total net operational emissions, including outsourced activity and reductions, fell by 245.9 kTCO₂e to 507.4 kTCO₂e[#] (753.3 kTCO₂e in 2015/16).



The emissions involved in delivering both our water and wastewater services to our customers are shown below:

| Service area | kgCO ₂ e | | |
|---|---------------------|---------|----------------------|
| | 2014/15 | 2015/16 | 2016/17 [#] |
| Operational GHG emissions per MI of treated water | 295.9 | 273.0 | 141.2 |
| Operational GHG emissions per MI of waste water treated | 298.4 | 303.1 | 225.4 |

**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 governments REGO (renewable energy guarantee of origin) accreditation scheme to demonstrate the electricity we consume is from a renewable source.

Reducing our emissions.

We've committed to making significant reductions to both our operational carbon footprint and energy consumption to help us become more sustainable and make sure we deliver for our customers.



We've made significant progress in the last year, reducing grid energy consumption and emissions through a diverse range of projects - most notably our carbon reduction programme at Littleton Pumping Station, which won Carbon Project of the Year at the Water Industry Achievement Awards. We also generated 255 GWh of renewable electricity from sewage sludge - find out more [here](#). Improvements to our vehicle fleet, including innovative devices called telematics and engine remapping, will also help reduce our fuel consumption costs and carbon emissions. Click on the links below to find out more.

- [Sunny Littleton Pumping Station \(0.47MB\)](#)
- [Using data insight to reduce energy usage \(0.22MB\)](#)
- [Improving our vehicle fleet with telematics and engine remapping \(0.30MB\)](#)

Looking forward.

Over the next few years, it will be vital to engage our people with our three clear and simple themes - using less, generating more and paying less for energy. We're also building these themes into our long term investment plans, applying them to our entire portfolio and integrating them into the delivery of our investments. Read more by clicking on the links below:

- [Energy Portfolio 2016-17 \(0.10MB\)](#)
- [Managing water pressure in Russell Hill \(0.30MB\)](#)

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 can't achieve this on our own, so we've continued to work with others to create opportunities to better understand what we can do.

Last year, as part of our commitment to responding to climate change, we worked with one of our valued partners, The Prince of Wales Corporate Leaders Group on Climate Change, to sign the Paris Pledge in support of the UN Conference of the Parties in Paris.

Our thought leadership.

During 2016/17 we've continued to work closely with a huge range of organisations to tackle the issue of climate change and lead debate, including but not limited to:

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

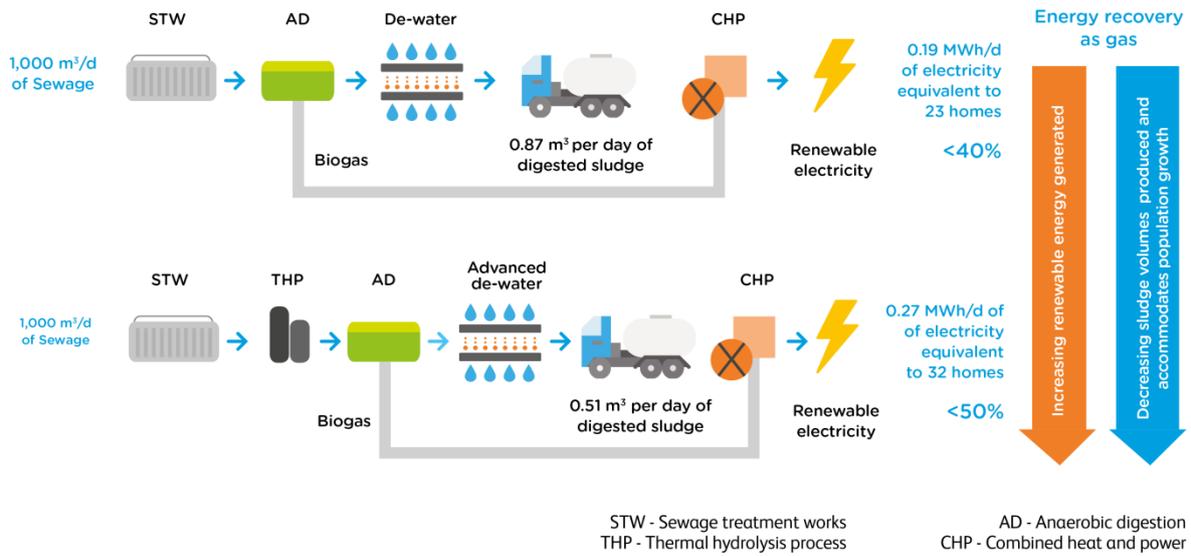
Delivering increased resilience.

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.

Over the past year, we've reduced our emissions by 245.9 kTCO₂e - a 48 per cent reduction compared to 1990 levels[#]. Despite generating 20.1 per cent of the electricity we used from renewable sources, we weren't able to meet our target of reducing our grid electricity consumption, which increased by 93 GWh.

We're pleased that during 2016/17, Europe's largest floating solar panel array was installed on our Queen Elizabeth II reservoir, enabling us to part power our Hampton water treatment works using solar power.

Energy recovery from sewage sludge



#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.

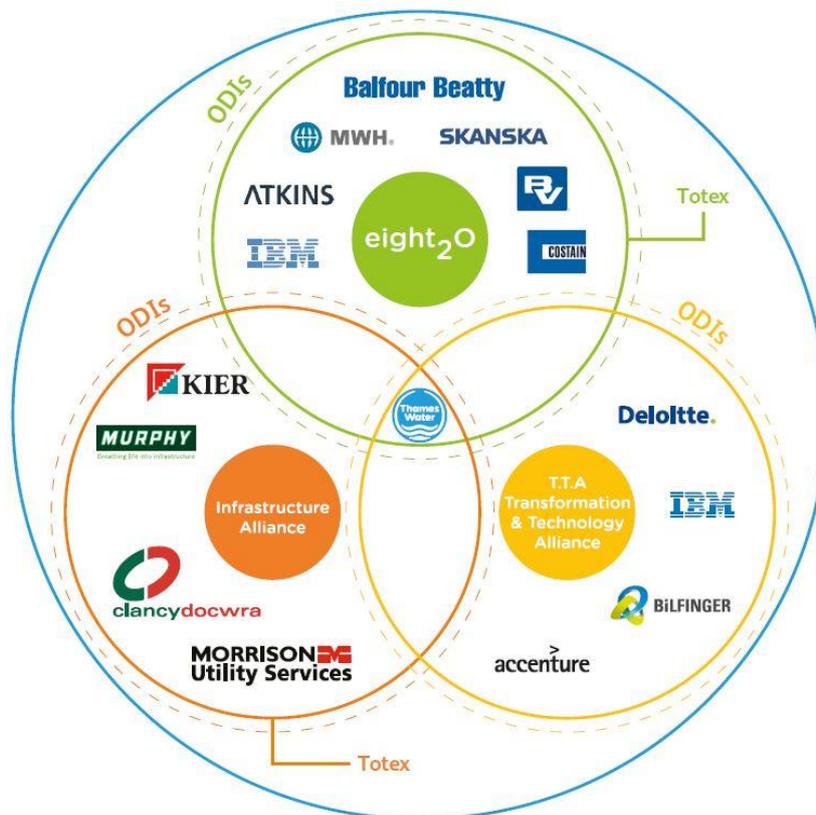
Delivering efficient operations.

We aim to run our business as efficiently as possible. We seek to reduce our use of natural resources, minimise waste and deliver efficient and effective operations for both today and the future.



Our Thames family.

In October 2016 we launched the third of our three ground breaking alliances - the Thames Technology Alliance (TTA). This sits alongside our existing eight₂O delivery alliance and Infrastructure Alliance. Collaboration is at the heart of our alliances, with all 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, sustainable solutions. Our alliance approach has changed the way we work for the better – helping us offer an improved service to all of our stakeholders.



Being more sustainable.

We're committed to reducing our reliance on natural resources and providing a more sustainable service in the long term. In 2016/17 we generated 20.1 per cent of our own electricity consumption from renewable sources, including sludge treatment, wind and solar PV. This allowed us to reduce our reliance on importing non-renewable electricity from the grid.

Although we try to maintain our existing assets as sustainably as possible, over time we'll need to develop new infrastructure, which will require additional resource and energy to operate. To make sure we get value for money for our customers, stakeholders and the environment, we look to optimise the costs of these solutions over their full lifetimes.

We work with the supply community to develop and deliver innovative, more sustainable solutions, and we always seek to deliver solutions that accommodate our nine sustainability themes.

Our supply community.

How we buy products, and who we buy them from, can have a significant impact on the efficiency of our operations. Our Group Commercial Services team brings together our Logistics Management Centre, Contract Management, Purchase to Pay, Facilities and Strategic Sourcing functions, and is responsible for managing the commercial lifecycle. Together, our aim is to develop a resilient supply community that operates with a shared set of goals, visions and values, delivering real benefits to our customers to help us become a more sustainable business.



Last year the team managed Thames Water's annual spend of £1.88bn at the same time as striving to make our supply community a more efficient and mutually beneficial place to do business. We've invested in tools and technology to make dealing with us easier, and we're transforming the way we communicate with our supply community.

Our new supply chain digital platform includes an online partner portal, a demand planning tool, spend analytics and a refreshed procurement methodology. Together these provide us with the following benefits:

- Supporting our supply partners - to develop and deliver innovative, sustainable solutions
- Sharing our challenges and customer priorities - to align goals and enable jointly developed initiatives
- Forward planning through robust demand forecasting - to enable a resilient supply chain and certainty of service delivery for customers
- Using data insights - to drive contract performance and deliver benefits for our customers and stakeholders
- Engaging with the supply market earlier - to enable efficiencies and provide optimal value for money for customers and affordable bills

For more information, click on the link below:

- [Logistics Management Centre \(0.27MB\)](#)

Finding the right partners.

We recognise we don't have all the answers to all of our challenges - and that's why it's so important to attract and retain the best supply partners to help us with this.

We look for those who share our core values, those who are interested in a long term strategic relationship with us, 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. As part of our sourcing process we ask potential suppliers for information on their approach to environment and sustainability.

Find out more by clicking on the links below:

- [Our supply chain performance \(0.24MB\)](#)
- [Bringing skills into our industry \(0.25MB\)](#)

Honest and Ethical behaviour.

We ask our supply partners for details about their use of subcontractors and any measures they have in place to effectively manage their supply chain. This includes what steps they've taken to make sure that slavery and human trafficking does not take place in any part of their business or their supply chain, along with a request for a copy of their anti-slavery and human trafficking policies.

Our standard supplier contractual terms and conditions include a provision for incoming suppliers (and each of their sub-contractors) to comply with the Modern Slavery Act. We also require our new suppliers to maintain a slavery and human trafficking policy. Standard contractual provisions allow for periodic and targeted audit of compliance with this requirement, using a risk-based approach.

At the point of awarding a contract to a supplier, they're obliged to meet the requirements of our Honest and Ethical Behaviour Policy. This and our Modern Slavery policy can be found [here](#).

Our payment terms.



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

In 2016/17 we paid £2.2 billion on goods and services received from our suppliers. Of these suppliers, we paid 90.7 per cent of all our invoices, totalling more than 140,000, in line with our agreed payment terms. We increased our payment target to 90 per cent in 2015/16, and this is the second year we've achieved it.

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 96.5 per cent of biosolids to agricultural land in 2016/17. We also use sludge to generate renewable electricity and reduce our reliance on energy imported from the grid. We generated 19.7 per cent of our overall electricity in 2016/17 from sludge management activity.



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 2016/17.

We transport and treat 4.6 billion litres of sewage every day, and last year, we produced more than 382,500 dry tonnes of sludge. We treated approximately 92 per cent of this sludge using anaerobic digestion or incineration. This allowed us to increase our renewable energy generation by about two 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.

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 2016/17, using biogas as a fuel recovered from sewage sludge treatment to feed combined heat and power (CHP) generators to produce renewable electricity, we generated 210 GWh of our electricity needs. We also produced a further 45 GWh by burning sewage sludge as a fuel, which contributed to our best performance of generating 19.7 per cent of electricity 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.

Renewable energy generation investment.

We've already installed combined heat and power (CHP) engines at the majority of our sludge centres. At ten of our sewage treatment works, we're currently upgrading and making our CHPs more efficient. We've recently commissioned three CHP engines at our site in Mogden, which are able to produce about 6 MW of electricity everyday - enough power to run over half of the site or the equivalent of 15,000 homes. Our new CHP engines will help deliver an extra 50 GWh of renewable energy every year, which will help power our sites and reduce the amount of electricity we import from the national grid.

Our new thermal hydrolysis process (THP) plant at Basingstoke sewage treatment works will be commissioned later this year, enabling us to produce a further 27 GWh of renewable electricity. It will also allow us to create a product that's preferred by our farming customers, and stop lime treatment of sludge, removing a potentially odorous process.

These schemes will help us to generate renewable energy from sludge more efficiently, as well as helping to reduce our operating costs and carbon footprint. This investment should help us achieve our challenging target of sourcing 33 per cent of our annual electricity requirements by 2020 from embedded renewables.

Sludge to land.

We're committed to the beneficial use of sludge wherever possible. In 2016/17, we recycled 96.5 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 focussed 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.

We're continually striving to improve performance against our sustainability themes, and the past year has been no different. Together with our alliance partners, we've delivered a number of innovative projects which have reduced the carbon emissions of our capital investment, and provided more sustainable and environmentally beneficial outcomes. We challenge ourselves on every project to consider our customers and sustainability themes – all the way from initial designs through to operation and eventual decommissioning.

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

- We've used alternative water supply sources to reduce abstraction to more sustainable levels. Our new 18 km Axford pipeline takes water from the Blunsdon and Farmoor reservoirs to supply water to south Swindon. The scheme was designed to protect flows in the Rivers Kennet and Og. The River Kennet is one of only 200 chalkstreams in the world and a Site of Special Scientific Interest.
- We've reduced the amount of stormwater in our sewer system and improved resilience to flooding. Development planned in the Nine Elms area in south London meant more sewer capacity was required. By using sustainable drainage techniques and working closely with the developers, we've reduced the amount of rainwater entering the sewer, and at the same time helped to improve public amenity and biodiversity across the site.
- We've used wastewater sludge to generate renewable energy. For many years we've been using gas from sewage sludge digestion to generate electricity in combined heat and power engines (CHPs). Over the past financial year this has reduced our reliance on the national grid by 14.7 MWh.

- We've used innovative methods and techniques to deliver sustainable solutions. For instance, we designed our new eel screens at Walton to be constructed off site, and then floated them down the River Thames to be installed at our abstraction point. The modular design and off site construction meant that a high level of quality control could be assured, and that the construction time spent on site was kept to a minimum.

For more information, click on the links below:

- [Axford and Ogbourne pipeline - licence reduction](#)
- [Walton eel screens](#)

Reducing our impacts.

We consider sustainability 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:

- Minimising waste and reusing material - at Hogsmill wastewater treatment works we used all the concrete from a demolished digester unit as road materials.
- Using recycled aggregate in place of new material - wherever we need to use aggregate, we aim to use recycled material. On our pressure management schemes, the teams are using almost only recycled aggregate.
- Avoiding open trenches - where sewers crossing under railways need repair, our first action is to investigate whether they can be lined rather than replaced. This reduces our carbon impact, but also minimises disruption to rail services and the environment.
- Creating habitats - at Slough wastewater treatment works we constructed a noise barrier and visual screen of reused excavated material in which we created a reptile hibernacula. At Hampstead reservoir, we've set up a 'bee hotel' with a screen to protect the bees from woodpeckers.
- Off-site manufacture - we've set ourselves a target to reduce time on site by 50% by manufacturing things off-site. We successfully used this way of working to deliver our Walton eel screens project, and floated the units down the Thames to where they were needed.
- Considering our neighbours and our heritage - we found a way to divert our works to replace ageing water supply pipes and avoid damaging a famous landmark, the Beatles' iconic Abbey Road crossing.

Click on the link below to read more:

- [Hampstead Reservoir membrane](#)

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 continue working with our teams to meet and outperform these targets.

At two wastewater treatment works, we're installing thermal hydrolysis plants (THPs) that will allow more gas to be created, and more renewable energy to be generated from sewage sludge treatment, than current processes. 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, and the product is less odorous than limed sludge - so there are more sites which willing to accept THP sludge.

We're continuing to seek innovative solutions for our schemes. For example, the large sewer running across the top of the underground train tunnel at Baker Street station was sagging and needed remediation. Rather than digging up Marylebone Road and causing disruption not only to traffic but also to the underground train network, we're planning a novel system inserted through manholes and assembled in situ, to strengthen and line the sewer from the inside. This will avoid the need for large-scale engineering works, and we'll report on this project's progress next year.

We'll continue to work towards meeting our targets, to provide water efficiently and keep our communities safe. At the same time, we're working to make sure there is no loss of biodiversity across our programme of improvements.

Providing sustainable drainage.

We collect and treat sewage from our 15 million customers. We use our sewer network to transport this sewage for treatment at 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.



For us, sustainable drainage means encouraging natural drainage and protecting, maintaining and enhancing our sewer network and treatment sites. We're continuing to work hard to make sure our sewerage network and treatment sites are as resilient as possible - to protect our customers, communities and the environment from potential sewer flooding or pollution. Whenever possible, we take advantage of opportunities to deliver more sustainable drainage solutions.

Maintaining our network.

Preventing flooding from our sewers is a priority for us. We're taking a proactive approach by investing in and managing our network more efficiently – including installing sewer alarms and regularly cleaning, monitoring and repairing our network. We're also working with council environmental health departments and the WaterUK Sewerage Network Abuse Prevention (SNAP) group to reduce sewer abuse by cutting the amount of wet wipes, fat, oil and grease that ends up going down the drain.

Heavy rain can also overwhelm our sewers, so we've made significant investment in flooding alleviation schemes, increasing our capacity and installing sustainable drainage systems (SuDS) to reduce and slow the flow of surface water into our pipes. We've also developed [drainage strategies](#) for areas previously impacted by sewer flooding, and introduced an advanced flood warning system to identify potential areas and reduce any impacts.

Improving London's rivers.

We've made really exciting progress with our major engineering schemes designed to help stop sewer overflows and improve water quality in both the River Thames and River Lee.

When they're completed, the Thames Tideway Tunnel and the Lee Tunnel will capture tens of millions of tonnes of sewage every year from the most polluting combined sewer overflows built by the Victorians.

Sewer flooding incidents.

Sewer flooding can occur when the sewer network becomes overwhelmed during intensive rainfall, or because of a blockage or collapse. It is a distressing and unpleasant experience for our customers, 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 2016/17, with a 13 per cent reduction in sewer flooding incidents, and a 4.6 per cent reduction in sewer blockages compared to the previous year.

In 2016/17, 1106 properties suffered sewer flooding due to blockages, collapses or equipment failure – less than the previous year. In 2015/16, 1,214 properties experienced incidents of internal sewer flooding due to other causes.

We've continued to be proactive in our approach with sewer cleaning and promoting what our customers can do to help prevent sewer flooding occurring. Click on this link to read more on how we're [preventing sewer flooding](#).

Preventing sewer flooding.



What we're doing.

Investing in our network - we delivered sewer flooding alleviation schemes to an equivalent of 60 properties during 2016/17. We're also introducing new analytical tools to help us understand the potential impact of pollution and target maintenance work more effectively. We've fitted sewer depth alarms in approximately 1,000 manholes to provide real time warning when sewage levels rise, so we can respond quickly and protect our customers.

Efficient management of our network - we regularly monitor, clean and repair sewers in high risk areas to reduce the risk of blockages and collapses. Our innovative new acoustic technology trials have 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 sewer flooding issues.

How we're responding - we're making process improvements to help prioritise jobs more effectively, and we now have more fast response vehicles and flood protection equipment to enable us to respond quicker. The introduction of City-Flex vehicles in London is making it easier for our teams to reach restricted areas of our sewer network.

Working in partnership - we work with council environmental health departments with targeting campaigns for specific hotspots. We are 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.

Supporting sustainable drainage systems - We support the installation of SuDS to reduce and slow the flow of surface water into our sewers. Read more about SuDS on our [sustainable drainage management](#) page.

Campaigns - During the year, we cleared over 80,000 blockages caused by cooking fat incorrectly disposed of via kitchen sinks and wet-wipes flushed down toilets. Sewer abuse is still a significant problem, so we're continuing to raise awareness of this issue, and we're targeting blockage hotspots with our 'Bin It – Don't Block It' campaign. To find out more, click on the links below:

- [Proactive catchment management - storm chasing \(0.41MB\)](#)
- [Bin it dont block it \(0.42MB\)](#)

Pollution prevention activities.

In March 2017, we received a large fine for pollution incidents that took place at our sewage treatment sites in Aylesbury, Didcot, Henley, Little Marlow and Arborfield, and Littlemore sewage pumping station between 2012 and 2014. Each and every one of these incidents is deeply regrettable. We asked for them to be considered and sentenced together because it was clear that our performance in this part of our region during that time was not up to the high standards that we and our customers expect.

Since 2014 we've reviewed how we do things and made a number of important changes, including increasing the numbers of staff in key operational roles and investing heavily to improve reliability. As a result, our performance has significantly improved. It is now imperative that we continue to focus on delivering service levels that show we are safe custodians of the environment.

“It's important that we are open in the way we work with customers, our regulators and other stakeholders. We will be holding open days at each of these sites later this year so that our customers and stakeholders can see the improvements we have made and speak to our teams who work hard to maintain high standards at the works. We will also be adding £1.5 million to our Community Investment Fund to improve the river and surrounding environment at the affected locations..”

Steve Robertson, Chief Executive Officer



Our current performance.

| | 2014/15 | 2015/16 | 2016/17 |
|----------------------------------|---------|---------|---------|
| Serious pollutions (Cat 1 and 2) | 16 | 12 | 10 |
| Total pollutions (Cat 1- 3) | 528 | 269 | 366 |

| | 2014/15 | 2015/16 | 2016/17 |
|------------------------------|---------|---------|---------|
| Self-reported pollutions (%) | 53 | 61 | 67 |

* 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.

In 2015/16 we saw a dramatic improvement in our environmental performance, with a 50 per cent reduction in the number of pollution incidents compared with 2014/15.

We are continually seeking to reduce pollution incidents, but while we made improvements in some areas in 2016/17, our overall performance was not as good as in 2015/16. Nevertheless, our performance in 2016/17 still demonstrates a significant improvement compared with 2014/15.

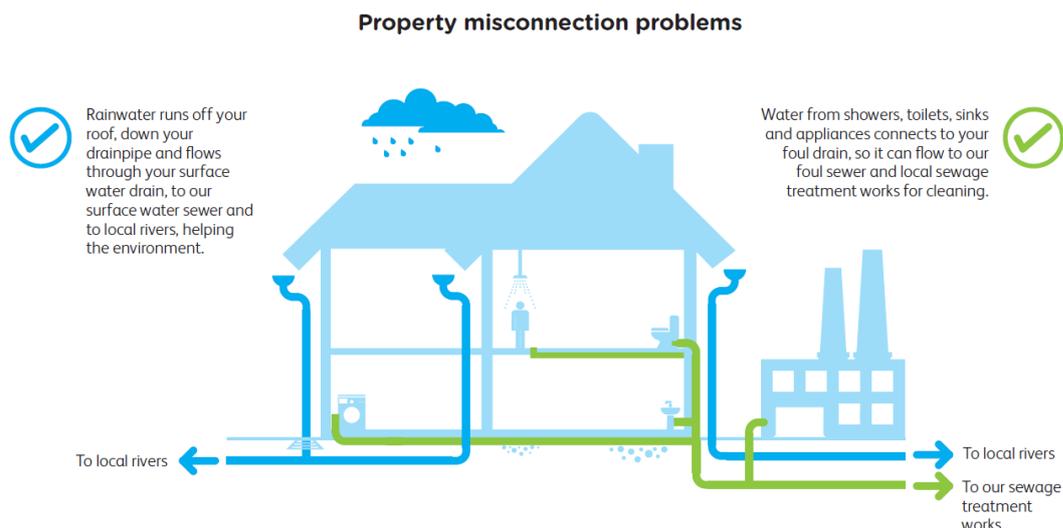
Improvements we've made.

Since our pollution incidents between 2012 and 2014, we have reviewed how we do things at all levels and made a number of changes, including:

- We have increased the number of area operational managers from one to three, therefore reducing the number of sites for which each manager is responsible. The entire management chain was changed in 2014 and since there has been a dramatic reduction in serious pollution incidents.
- Comparative performance across the industry is published by the Environment Agency during 2015. We are rated as an above average company. We were assessed as being ahead of target in four categories out of six and close to target with an improving trend in the other two.
- We have spent £25.8 million on improving compliance performance and reducing pollution risks at our sewage works. Other improvements include our ongoing £18 million programme to refurbish screens which protect our treatment process from items such as wet wipes that have been a contributory factor in some pollution incidents.
- Our customer education programme, [Bin it – don't block it](#), continues to expand to help reduce the amount of material disposed of incorrectly via the sewers. More than 500,000 homes are being targeted in the highest risk areas.
- We have increased staff numbers by over 50 per cent to 56 in our waste operations control centre allowing better monitoring and proactive intervention to prevent pollution incidents. We have also created a 24/7 shift manager position to provide direct supervision of the controllers. We have improved processes for responding to alarms alerting us to potential problems and new software displaying operational data in real time.
- We have introduced a new process to track and record the process performance of all sewage works centrally allowing any compliance issues to be identified and rectified quickly. We have also significantly increased the resources available to our specialist wastewater contractors to help prevent and where necessary manage pollution incidents effectively.
- We have added £1.5 million to our Community Investment Fund, ring-fenced for projects to help the rivers, wildlife and local environment in the vicinity of these events. We have also paid around £400,000 in compensation to businesses and other organisations directly affected by the incidents.
- We have committed to holding open days during 2017/18 at all the sites where incidents took place, the first of which was held at Aylesbury sewage works in July 2017. This will allow local residents and other stakeholders to see what has been done 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) drain. We estimate 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.



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 go to our sewage works to be treated.
- **Surface water drain** - where clean rainwater from roofs and ground runoff is released directly into a local watercourse.
- **Combined drain** - where foul (wastewater) and surface water go into the same drain which is taken to our sewage works and treated.

Fixing the problem.

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

In 2016/17, we helped our customers fix faulty plumbing at approximately 639 properties across 42 catchment areas totalling over 37,000 properties. In these areas we identified 1477 misconnected appliances.

We're continuing to investigate another 89 surface water catchments, an area which covers over 115,000 properties. To date we've found over 2,900 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:

- [Tackling misconnections in our catchments \(0.41MB\)](#)

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 in improving these rivers by removing sources of pollution that enter them... the extent of the pollution problem is worse than we had previously thought so... we need more of Thames Water's good work to effectively tackle this serious environmental issue."

Joe Pecorelli, Project Manager, Conservation Programmes, ZSL

Sustainable drainage management.

We're working in one of the most densely populated and urbanised regions in the UK, which places a lot of pressure on the water environment, particularly drainage.



What's the problem?

Sometimes we don't have enough rainfall to meet our supply needs and maintain a healthy environment. Yet we can also have too much rainfall, which can overwhelm our sewer network causing flooding - a distressing and unpleasant experience for customers, as well as a potential environmental risk.

We expect rainfall patterns to change in the future, resulting in wetter winters, drier summers and more intense storm events. As a result, we need to fund ways to manage water in a more sustainable way.

What can you do?

- **Use less water** – visit our [reducing what we use](#) page to help reduce the amount of water you use, helping to save money and protect the environment
- **Capture more rain** – collect rainwater in tanks or water butts for use in your home and garden to reduce the amount taken from the tap
- **Encourage natural drainage** – allow rainwater to naturally soak into the ground with Sustainable Drainage Systems (SuDS) like soakaways, flower beds and permeable paving, all of which slow rainwater run-off and ease pressure on our sewer network

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. For example:

- Sharing our data and expertise with local authorities and organisations, and contributing to local plans on sustainable water management

- Continuing to work with Defra, WaterUK and developers on the challenges facing SuDS, and helping to raise awareness of sustainable water use
- Using innovative software to explore SuDS opportunities across our region and contributing to the installation of SuDS schemes
- Retrofitting SuDS to existing developments and managing the impact of new developments on our sewer network
- Investing money to increase the capacity of our sewer network in areas at risk of flooding

For more information, click on the links below:

- [Nine Elms SuDS project \(0.51MB\)](#)
- [Retrofitting SuDS in London - Counters Creek \(0.58MB\)](#)

Sustainable sewage treatment.

We transport and treat 4.6 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.



Maintaining compliance.

Once wastewater has been safely treated, the water is discharged from our sewage treatment works into local watercourse. Therefore, it's really important we get our treatment processes right so the health of the watercourses can be maintained.

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%, but in 2016/17 only 98.28% of our sewage treatment works achieved their discharge compliance target. Although some of the problems were the result of human error, extreme wet weather and unconsented discharge of effluent into our sewers by customers also contributed.

To make sure we meet our compliance commitments in the future, we've continued to invest in our assets by, for example, 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 with Tideway (Bazalgette Tunnel Limited) to deliver the Thames Tideway Tunnel. When it's complete, together with the Lee Tunnel, this will capture tens of millions of tonnes of sewage a year from the most polluting combined sewer overflows built by the Victorians.

“As well as this significant environmental improvement for the River Thames, this project will also deliver a wide range of legacy benefits for London.”

- *John Sage, Corporate Responsibility Manager, Tideway*

Find out more about the tunnel and the project’s legacy at www.tideway.london.

- [A cleaner and healthier River Thames 16-17 \(0.55MB\)](#)

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 can return home safe and well each day. That's why we're committed to our Zero incidents, Zero harm and Zero Compromise vision.



Safe in every sense.

It's essential that we take the same zero compromise approach with health and wellbeing and safety. We're continuing to create a culture where wellbeing as well as safety is accepted as part of what we do every day, and we have a dedicated health and wellbeing strategy which categorises our approach.

As part of our strategy we offer a range of programmes to help employees keep fit, eat well, stay healthy and manage mental health. Click on the links below to find out more:

- [Our health and safety policy 2017 \(0.14MB\)](#)
- [Health safety and wellbeing strategy and objectives 2017-18 \(2.65MB\)](#)

People make the difference.

As well as a safe workforce we need a sustainable one. For us, this means recruiting and retaining the best people, and providing 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.

In 2016/17 we continued to expand our talent pipeline programmes. Working within the London Health and Safety Forum we have developed the UK's first Safety, Health and Environment (SHE) apprenticeship scheme.

“There was a groundswell of recognition that, with the growth of our profession throughout the UK, we have an opportunity to support the world of work through the development and implementation of a formal health and safety apprenticeship programme. I am delighted with the work undertaken this past year, led by a group of dedicated health and safety professionals, and am looking forward to the first apprentice commencing the new scheme.”

- Karl Simons, Head of health, safety, security and wellbeing and chair of the London health and safety directors forum

Health and safety.

In our business the top priority for our employees, contractors and visitors is their safety health and wellbeing and as such we have a shared vision:

- Zero incidents
- Zero harm
- Zero compromise



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 continue to introduce initiatives based on emerging risk areas to reinforce our vision of Zero harm, Zero incidents and Zero compromise every day. The key initiatives in 2016/17 were:

- Introducing a company-wide mental health awareness campaign
- Developing the use of drones to conduct specific statutory inspections and reduce the risk of harm from activities such as working at height. Over 80 drone inspection days are planned for 2017/18
- Re-branding our Essential Standards to provide clear and concise messages on health and safety expectations

Read more by clicking on the link below:

- [Drone technology - our eye in the sky \(0.33MB\)](#)

Performance and improvement.

We're committed to improving safety standards across our sites and seeing a noticeable shift in the safety culture of our business. In 2016/17 we've seen an encouraging 46 per cent increase in the number of hazards being reported by our employees - preventing incidents before they occur.

Over 800 senior management inspections were carried out last year, with the total number of management inspections increasing by 57 per cent. This has helped to reduce the lost time injury frequency rate by 17 per cent, with a 21 per cent decrease in the RIDDOR (serious) injury frequency rate. We saw our first ever day when no employees or contractors across our entire business were off work with a work related injury. Twice during the year, we also clocked up 2,000,000 consecutive hours worked without a lost time injury.

We use a range of metrics to assess our performance, including in the table below.

| Indicator | Actual 2015/16 | Actual 2016/17 |
|--|----------------|--------------------|
| Reportable injury rate – based on reportable injuries under RIDDOR per 1000 fte (Reportable injury frequency rate – based on reportable injuries under RIDDOR per 100,000 working hours) | 0.19 | 0.15 (0.08) |
| Lost time injury rate – based on all injuries resulting in lost time over 1 day per 1000 fte (Lost time injury frequency rate – based on lost time injuries over 1 day per 100,000 working hours) | 0.46 | 0.38 (0.21) |
| Reported work related illness resulting in lost time over 1 day | 38 | 29 |
| Hazards (unsafe acts/conditions) reported and investigated | 25,731 | 37,742 |
| Management H&S inspections | 15,382 | 24,213 |
| Health and wellbeing surveillance | 4,004 | 4,909 |
| Health and safety training days | 12,155 | 13,529 |

Last year, our reportable injury rate dropped from 0.19 to 0.15, as did our lost time injury rate of 0.38 (0.46 in 2015/16). We also saw an increase in the number of management inspections and hazards reported and inspected.

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 2017/18 will include:

- Introducing mental health first aid and awareness training
- Re-designing and implementing a structured behavioural safety campaign
- Developing and implementing a system for electronic health and safety work authorisation and permits

Click on the link below to learn more:

- [Health safety and wellbeing strategy and objectives 2017-18 \(2.65MB\)](#)

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 continuing to place great importance on the proactive prevention of exposure to risks which can result in illness, while creating an environment where all our people can improve their own health and wellbeing through making informed choices.

Thames Water's wellbeing was boosted last year thanks to familiar initiatives like personal medical assessments (PMAs) and some new introductions, including support with weight loss and quitting smoking.

Our wellbeing initiatives.

Over half of our people attended a PMA last year. More than 20 per cent were found to be suffering from silent but potentially life threatening health issues, and were subsequently referred to the GP for further investigation and treatment.

Since PMAs began in 2013, we have identified ten cases of early prostate cancer amongst our people, who have all been able to access treatment prior to showing any symptoms. A significant number of colleagues who had a PMA in 2016 were found to be overweight. We therefore offered a free 12 week programme with Slimming World, with nearly 300 employees joining local groups. Most made significant lifestyle changes, with an average loss per person of more than 14 lbs over the 12 weeks. We'll also be offering employees a 1:1 coaching session to review progress three weeks after their PMAs if there were any concerns, to help support and tailor a specific health plan to positive behavioural changes.

Approximately 250 people attended a number of Positive Energy sessions we held with Dr John Briffa, who shared simple strategies to help people get the best out of their day, focussing on diet, physical activity and general wellbeing. These successful sessions will be held again this year.

We will also develop and facilitate physiotherapy led training sessions for our people 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.

Through a sustained approach of highlighting the importance of mental health at work and our other wellbeing initiatives, we saw a reduction in work related mental health referrals by 30 per cent. We held a Time for Tea executive challenge as part of the first GB Health and Wellbeing Week which helped spearhead our mental health awareness initiatives.

As part of our continued commitment to changing perspectives in mental health, we have developed a new and innovative mental health campaign – Time to Talk. This will be underpinned by four principles: spotting the signs, providing opportunities to talk, offering a listening ear, and talking to professional support services early. Our commitment to removing the stigma around mental health will be further demonstrated by signing up to MIND's Time to Change pledge.

The continuing journey.

Our positive outcomes from last year have helped define our three objectives for 2017/18:

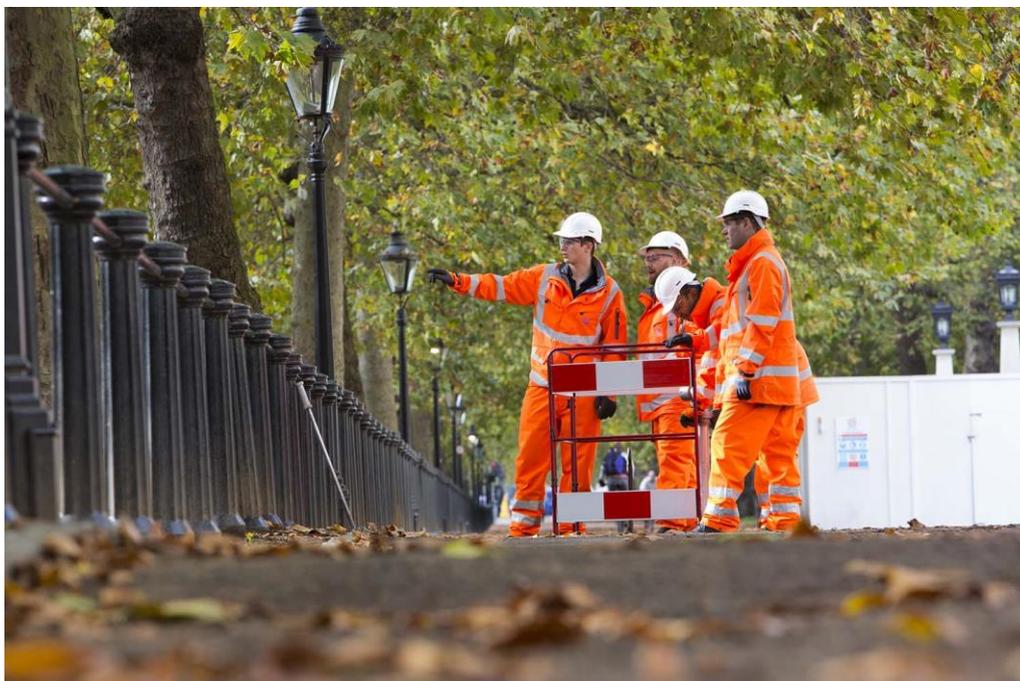
1. Continuing our commitment to changing perspectives in mental health - by developing an innovative mental health programme
2. Developing a programme to enhance physical resilience against injury
3. Enhancing our health screening and surveillance programmes - to recognise potential problems and support, coach and facilitate behavioural change.

For more details, click on the link below:

- [Health safety and wellbeing strategy and objectives 2017-18 \(2.65MB\)](#)

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.



Our people matter.

We want every experience, for every one of our people, to be the best it can be. It's our belief that by having proud, engaged and talented people - who are passionate about our business - we can provide an amazing customer experience.

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 focussed, and they that remain safe when working both on our sites and in other locations.

Our vision and values.

We co-created our vision and values with our people. We engaged our staff throughout this process, to make sure everyone had a say in the type of business they wanted to work for.

The values we identified and adopted are now a huge part of how we do business, work together and continuously improve for our customers. This year we've developed our vision even further, by consulting with our people, and defined our ambitions for our teams, customers and assets. These will be shared with the wider Thames Water family.



Our people strategy.

Our people are key to our strategy and success. It's important they:

- Know they're empowered and have the tools to perform at their best
- Feel passionate about our business, are proud of what we've achieved, and are excited about our future
- Are confident about their role – and their team's – in building our future

"We aim to be the best water and wastewater company in the UK, and we're changing to help us achieve this. We can only achieve this by having the very best people in our business. Our people strategy and promises set out how we will support our Thames Water family on this journey by building a working environment and culture in which we inspire everyone to live our values and do their very best for every one of our customers, every day.

Having dedicated people with the right skills and experience in each part of the business provides a real partnership for success. Being 'Here for you' and for our customers will always be at the heart of everything we do. Because of the work we have done to make sure we have the right roles, skills and capabilities in place to operate successfully in the future, I feel confident that we are really well placed to continue transforming as a business and to achieve great things together."

- Janet Burr, HR Director

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 our people is vital to our success as a business. In 2016/17, we delivered more than 24,000 days of formal technical, process and systems development. We continually refresh our training opportunities and offer leadership, management and personal development modules to help all our employees improve their business and behavioural skills.

Alongside our general learning and development, our 'talent pool' focusses 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 leaders have an important role to play in our success and in bringing our values to life. Investing in our longer term pipeline of future leaders, through initiatives like our apprenticeships and graduate scheme, helps create the right inspirational environment in which our people can thrive.

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.

Our latest survey shows we're making real progress in this area, with 74 per cent of our people taking the time to respond, and our overall engagement score reaching 69 per cent.

Hear for you

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

Celebrating our success.

It's really important we celebrate success and have a recognition scheme that enables individuals to be instantly recognised for having done something extraordinary. We also hold annual award events where we celebrate people who have excelled in demonstrating our values, championing health and safety and delivering for our customers. Last year we had over 600 nominations, all demonstrating great personal or team achievements.

Our future talent.

Finding and nurturing new talent now is important as we need an army of operational staff ready to take over from those who will retire in years to come. Our schemes for attracting new talent include our apprenticeship and trainee programmes, our graduate scheme, and 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.

“Your activities have really encouraged problem solving and teamwork skills - a first taste of being an engineer!”

Mary Lewis and Yvonne John, Teachers at The Ridgeway Primary School, Reading.

Our work with secondary schools is more focussed, and we look to engage with students who could potentially become our employees. As part of this approach we've become a lead sponsor in creating the London Design and Engineering University Technical College, and we are maintaining strong links, including mentoring students, and sitting on the governing board. We're also working with other University Technical Colleges across our region.

Our graduate programme.

Our graduate programme is all about creating future leaders. We recruited 38 graduates onto this programme in 2016, with over 40 joining us in 2017. 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 operating for many years.

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. Last year we had 32 apprentices join us, and another 35 are due to arrive in September 2017. 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 organisation. Learn more by clicking on the link below:

- [Apprentice of the year 2016-17 \(0.25MB\)](#)

Traineeship programme.

The water industry as a whole is faced with the loss of key skills and knowledge as a result of longstanding, experienced employees retiring. In 2016/17, three trainees have secured permanent roles with us after successfully completing our six month programme.

Giving people a start.

Our Give Someone a Start work experience programme continues to be a success. In 2016/17 we offered 28 placements to unemployed people who want to gain skills and experience to help them to find future employment. Of those who participated, eight candidates have since been employed by us or one of our partners. For more information, take a look at [our education programme](#) page.

Diversity and inclusion.

Our aim is to be a business which attracts and retains highly talented individuals who can actively contribute to furthering our performance and improving customer experience.



It's important to us that all our employees can be themselves at work and are able to give their best. We are working hard to become a more inclusive organisation. We have extended our internal diversity networks, introduced unconscious bias training, made our facilities more accessible, and extended our recruitment pipelines and practices to attract a wider audience, including a returner's programme. We're also continuing to be sponsors of Pride events across our region.

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 whistleblowing helpline available 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 2016 \(0.20MB\)](#)
- [Honesty and ethical behaviour policy \(0.38MB\)](#)

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 are reviewing, changing or introducing, we do it all in partnership.



In the last twelve months 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.

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.