

Taking care of customers' supply pipes



WONDERFUL ON TAP



Overview

Across the UK, more than half of properties were built before lead pipes were banned in 1970, and may therefore still contain them. Although we meet the legal standards of a maximum 10ug/l of lead through continuous chemical treatment of water supplies, the World Health Organization (WHO) states there is no safe level of lead in drinking water. Young people exposed to lead in drinking water, even at the current standard, show increased behavioural problems and lower IQs. Toxicological evidence reported by Public Health England¹ also noted that there could be subgroups of children with increased susceptibility to lead, such as those living in areas of high social deprivation. The health risks have been reflected in the tighter compliance standard of 5ug/l by 2036 in the revised European Drinking Water Directive, which is currently under review to map across to UK legislation.

Instead of waiting for the legislation to catch up with the science, we think there is an imperative to act sooner. This is not just because of the health risks, but also in recognition of the huge affordability challenge associated with supply pipes across the short and medium term:

- Short term – over 40%² of all households in the UK do not have the savings to fix a burst supply pipe or replace a lead pipe.
- Medium term – there is no clear industry-leading solution for fixing this problem. Given the impending tighter standards, this will place significant pressure on customer bills.

We need to find cheaper and more effective ways to work with customers to fix this problem in an affordable manner. If this can be achieved, it also has the added benefit of reducing leakage and the need for future investment in water resources, given at least a quarter of all leakage comes from customers' supply pipes.

Currently, our ability to take full ownership of these risks ends once pipes have passed beyond the boundary of customers' properties. With our customers' support, we want to change this – starting with three large-scale trials, at a total cost of around £100m. Our proposal includes the following:

- Coventry – Working with the community to replace around 25,000 customer-owned pipes across the city. Trialling both technology and engagement approaches to ensure we maximise learning to inform future policy and customer communications. Aligning this work with our planned mains renewal and metering activity to identify how far we can reduce costs if we take a more holistic approach.
- Shropshire – Replacing 1,000 pipes in a smaller, rural community to enable withdrawal of chemical treatment, setting the blueprint for the long-term disengagement from chemical dosing. The aim of this trial is to engage the entire community to enable chemical dosing to be withdrawn. So our proposal includes a series of tools to support customers – including engaging information that explains the current risks and trial aims, accessible legal documents, and real-time digital tools to allow customers to engage in the redesign of their streets.
- Worcester – Offering grants and working with local plumbers to incentivise the replacement of around 4,000 lead or leaking supply pipes. This will involve a controlled test to understand the uptake rate depending on customers' preference for who carries out the work.

In each of the three geographic areas we will also trial innovative methods that allow faster, less disruptive identification of lead pipes, and pipe replacement techniques that reduce both costs and disruption to customers' property. This will provide much-needed insight into how to create a sustainable and lower-cost model that could be rolled out across our region and beyond. This is critical to improving the affordability of compliance with the forthcoming 5ug/l standard and meeting future leakage targets.

Our trials will bring not only immediate customer benefits, but also wider benefits for our communities and region. Pipe replacement is often associated with disruption and cost; negative connotations that have hindered customer action

¹ <https://cot.food.gov.uk/sites/default/files/cot/cotstatementttds200808.pdf>

² 48% across UK have no or less than £1500 savings See 'Money Statistics: February 2019' The Money Charity and 35% of people in East Midlands have less than £1000 savings <https://www.raisin.co.uk/newsroom/articles/better-saving-money/>



Customer-owned supply pipes are a hidden liability for many of our customers. By looking beyond the boundary of our assets and taking care of these pipes, we can eliminate the health risks associated with lead pipes and secure affordable solutions for our customers.

Liv

Liv Garfield,
Chief Executive



to date. We want to turn the tables and use this as an opportunity for stronger community engagement as well as supporting biodiversity and water-efficiency initiatives. It will also create around 240 direct jobs and around a further 200 jobs across the supply chain. And we will leverage the potential of our new Academy to ensure our workforce is equipped with the right skills. In our independently conducted customer research, 82% of household customers expressly supported our proposal, and a further 14% did not mind it in principle.

Most importantly, we are limiting the impact on bills in the current period to 15% for the entire £730m package of six Green Recovery proposals. This equates to around £6 extra per year (on the average household bill) – which our independently conducted research found over 70% of our customers would be willing to pay.

The benefits of these trials are wide ranging, including:

Environmental benefits	Economic benefits	Social benefits
<ul style="list-style-type: none"> ● Driving down leakage by a million litres a day ● Developing a blueprint for disengaging from chemical dosing 	<ul style="list-style-type: none"> ● Around £11,000 per household reflecting the economic benefits relating to avoided loss of earnings, health and education savings ● Revealing the true costs and benefits relating to leakage on supply pipes ● Creating around 240 jobs that can be mobilised quickly, and offering training to provide skills for life 	<ul style="list-style-type: none"> ● Immediate benefit to up to 30,000 homes who will no longer be drinking water that has been in contact with lead ● Removing the risk to young people - reducing the impact of increased behavioural problems and lower IQs ● Opportunity for positive engagement and education on wider topics such as water efficiency

About this document

The Green Recovery has provided us with a welcome opportunity to be bold, move faster, and think outside our traditional remit.

This is one of six proposals that Severn Trent has prepared for consideration by Defra and Industry Regulators. Like the others, it has been chosen because it represents a 'knotty problem' we need to untie to benefit the UK in the long term; it will require multi-agency collaboration in order to deliver at scale and pace; and, importantly, this will deliver jobs and support a green recovery from the pandemic.

Why tackle lead in supply pipes?

Customers' supply pipes are a hidden, and often unknown, liability. Because of the age of housing stock, around 50% of homes are at risk of having supply pipes that run from our network into their homes that are made of lead. There are compelling reasons, from the health of individuals to the resilience of our region, to take action to tackle them.

Safeguarding the health of future generations

The presence of lead in water is a public health concern. The World Health Organization (WHO) states there is no safe level of lead in drinking water. Young people exposed to lead in drinking water, even at the current 10ug/l legal standard, show increased behavioural problems and lower IQs. Tackling lead in water has been recognised as an urgent problem, reflected in the tighter standard of 5ug/l in the revised Drinking Water Directive, which is currently being reviewed for mapping into UK legislation.

Compliance with lead standards (and safety) is achieved through phosphate dosing. Industry compliance at this standard is high, but it is unlikely that phosphate dosing will achieve the tightened standards of the future.

Tackling phosphates

We currently provide protection against the risk of lead in drinking water by using 3,000 tonnes of phosphate chemicals at a cost of £2.1m per year. Between 2020 and 2030, £2.5bn will be invested in wastewater treatment process upgrades for phosphorous removal. It runs contrary to the concept of a circular economy to rely on phosphate dosing at one end of the water cycle, while actively seeking to remove it at the other.

There is also a significant cost associated with chemical dosing. Phosphate costs have been very volatile, with unit costs increasing 30% in the last three years. There have also been periods of scarcity, such as the shortage in 2008, and questions raised about the resilience of the supply chain. The industry's reliance on continuous dosing may therefore be unsustainable.

Supporting future water supplies

The Government forecasts that 4,000ML/d of new supply-demand capacity will be needed by 2050. Reducing leakage is one of the key ways in which we can start to close that gap. We are on track to reduce leakage by 15% over AMP7, and by 50% by 2045. We are also committed to helping customers reduce their water consumption by 10% by 2045.

However, at least 25% of leakage is outside our direct control as it occurs on customers' supply pipes. Current policies typically rely on customers voluntarily taking action, or companies incentivising customer action once a leak is discovered. This proposal is an opportunity to reveal better data on the extent of supply pipe leakage and to drive efficiency savings by tackling both lead and leakage at the same time.

Helping the financially vulnerable

Under the existing model, customers are expected to pay to replace their supply pipes, typically costing between £1,000 and

£1,500. DWP data from 2019 shows that approximately 13m households (48% of all UK households) have either no savings or less than £1,500 in savings. The East Midlands region has the third highest proportion of customers with savings of under £1,000 (35%), after the North East and North West. This means that around half of the households we serve may struggle to pay for lead pipe replacement themselves, and are vulnerable to emergencies such as burst pipes. The impacts of Covid-19 have been particularly acute on lower socio-economic groups, making these affordability challenges even more pressing at this time.

Our vision: multiple benefits through supply pipe replacement

We fully embrace our sector's long-term ambitions to protect public health from the negative impacts of lead in drinking water, and to reduce leakage by 50%. Tackling supply pipes and sharing the cost across the entire customer base is the only way we believe we can protect everyone at an affordable cost.

We are proposing a £98m scheme across three geographic areas and including several trials to identify the lowest cost, most effective way to unlock significant economic, social and environmental benefits in both the short and medium term.

Short-term benefits:

- Improved health by permanently removing health risks associated with lead pipes for up to 30,000 customers.
- A better customer experience by exploring the barriers to current uptake of pipe replacement, and identifying options to mitigate or minimise them.
- Economic growth and sustainable job creation through the trialling of different delivery models, including in-house and outsourced approaches.
- Support for vulnerable customers, who may struggle to pay for remedial works on their pipe.

Medium-term benefits:

- Economic benefits associated with the negative health impact of lead in drinking water, estimated at around £11,000 per household (reflecting the avoided loss of earnings, cost to the health and education services).
- Reveal lower-cost solutions, including how best to engage customers in disruptive activities, how to reduce chemical dosing, and the associated benefits of lead pipe replacement, that can be utilised at future price reviews. All learnings will be shared openly with other water companies and interested stakeholders.
- Unlocking greater potential to reduce leakage, as the industry makes progress towards ambitious leakage targets.
- Development of skills and competencies in our workforce, partners and self-employed trades in our region, including a focus on 18-24-year-olds.
- Reduction in chemical treatment through the development of a blueprint for long-term disengagement from phosphorous dosing. This will result in cost savings for customers and improved water quality in rivers.

Why now?

Despite the compelling reasons for lead supply pipe replacement, the current model is proving too slow to drive change at the pace needed.

We believe that now is the right time to move forward with this investment, for the following reasons:

1.

Removing the health risks and inequality

There is a wealth of evidence that connects lead in drinking water to a range of health and wellbeing issues, particularly for young children. The impacts include reduction in IQ, shortening of attention span, behavioural problems and depression.

There is also evidence that financially vulnerable customers are more likely to live in properties with lead supply pipes. The pressures relating to the financial impact of Covid-19 emphasises the urgent need to tackle this inequality.

2.

Accelerating the achievement of Government priorities

The introduction of new lead standards is imminent. Given that the current approach of phosphate dosing is unlikely to be sufficient, and considering the long-term impact of lead, particularly on vulnerable customers, it is clear that we need to think differently to find a more affordable solution to meeting future statutory requirements.

We also need to make faster progress towards affordable ways of meeting the Government ambitions in terms of reducing water demand – a key contributor to securing water supplies into the future.

3.

Sharing learning across the industry

The challenge we face is common to every water company but, as yet, there is no industry-leading solution. Our approach of trialling three different delivery models will provide the industry with much stronger insight about how a step change in replacement (that also delivers health and leakage benefits), and a better customer experience, can be delivered affordably.

4.

Skills and jobs for the UK's Green Recovery

At a time when the UK is facing projected unemployment of up to 11%³, the benefits of this proposal to the country's Green Recovery will be significant. There is an urgent need to deliver employment and skills benefits at a fast pace.

5.

Economic circumstances create the optimal conditions for investment

With the cost of debt at a record low and inflation well below the assumptions at PR19, we have the opportunity to invest at a very low cost and keep bills affordable.

³'Economic and fiscal outlook.' OBR (November 2020). Figure relates to virus downside scenario.

Our proposal

While the need to remove lead pipes and reduce leakage is clear, there is considerable uncertainty around how this is best done while maximising the benefits for our customers and the environment.

Our trials will offer a structured, data-driven approach to shaping the future direction our industry takes, each prioritised based on scope, certainty and timescales for the benefits to be realised. Selecting the best locations is key and we have used the following criteria to ensure maximum learning value:

	Coventry	Worcester	Shropshire
Lead risk	High to medium	High	Low
Opportunity to disengage from phosphate dosing	Medium	Low	High
Opportunity to drive efficiency through synergies	High	High	High
Opportunity for levelling-up	High	High - medium	Medium
Good mix of property styles and ages	Largely urban	Rural-urban mix	Rural

Our £98m proposals include:

- £88m to replace 30,000 customer pipes. This includes the cost of identifying lead, surveying the area, replacing the pipe and reinstating the area, and installing a water meter and boundary box where necessary.
- £2m for communication and community engagement, a combination of operating cost for the team needed to ensure customers are given the right information and support at all stages throughout the project, and for digital tools and community events to allow communities to engage in the rebuild phase.
- £3m of wider initiatives to unlock wider benefits – for example, installing water butts at 30,000 homes, replacing ground surface with permeable surfaces where communities also have flood risk or suffer from surface water flooding, and tree planting as part of the reinstatement.
- £2m for innovation trials to test technology and gathering data and evidence to understand costs and benefits.

⁴ Full details of the prioritisation exercise are included in the detailed business case.

- £1.5m for training and developing skills for newly created posts and where the trial includes working with self-employed plumbers who are bidding to deliver this activity.
- £1m for improvements to our data capture and sharing system which can be used by the wider community to enable fuller rollout in future.

Our proposals will address the hidden underground risks and leave the communities with greener streets and without the stress of the financial burden associated with their supply pipes, as illustrated in one of many similar streets across Coventry:



Programme costs

The improvements will be delivered by 2025 and is activity that can be mobilised quickly.

We have based our costs on previous experience, and have also learned lessons from other companies' proposals and the efficiency assessments included in the PR19 final determinations. The accompanying business case gives further depth to these proposals, programme, timeline and costs and evidence to demonstrate cost efficiency.

The purpose of the trial is to continuously push to identify more efficient solutions. We will maximise opportunities to work with others, such as local housing authorities, to look for more ways of sharing costs and driving better value for customers.

To protect customers from the cost uncertainty, we will recover the majority of the costs after the benefits are delivered in 2025 and work closely with regulators to challenge its scope and delivery throughout.

The accompanying business case gives further information into the proposed programme, timeline and costs.