INDUSTRY COMMENT

ASSET HEALTH: TIME FOR A REGULATORY RE-SET?

Martin Hurst makes the case for a fundamental shift in how maintenance spend is set, based on a strategic assessment of the pressures that water assets face and how technology may shake things up.

When I was the water director in Defra, 15 years ago, I was told that the average rate for sewers being replaced was around once every 600 years. When I asked the then Ofwat leadership what the rate should be, I was told that was a question for another decade.

This reluctance to ask fundamental questions about the health of water assets, such as pipes, sewers, treatment works and pumps, has not made the issue disappear. Indeed, failing to answer the kind of question I asked 15 years ago may have led to some major problems coming home to roost.

Ofwat's Price Review 24 methodology statement claims that past price reviews "have been sufficient for companies to maintain and improve outcomes and asset health". So perhaps things are under control. But the noise we are hearing about the condition of water assets from across the industry suggests at least that it merits examination. Our recent Indepen work looking forward to PR29, based on round tables and workshops with industry, NGOs, regulators, government and the supply chain, certainly identified 'capital maintenance' as a major area needing re-examination.

That's not to say that any 'blame' falls entirely on Ofwat. Companies haven't covered themselves in glory. Despite improving trends in things like unplanned outages and drinking water quality, there are no shortage of service failure examples linked to poor asset maintenance or management practices. Progress on leakage reduction has been lacklustre and Ofwat's latest service report shows many companies failing to keep promises in a variety of areas including mains renewal and pollution incidents. Companies have often contentedly underspent against capex "allowances", while asking for more money in the following five-year price review.

A national problem – and hard to measure

This is not a problem confined to water. Sectors across the economy (and indeed the world) find it easier to secure money for new projects than to keep the old ones going: we have similar problems with our flood defences, roads, parks, public buildings, hospitals, schools, social and rented housing. For evidence one need go no further than a recent National Audit Office report on our flood defences, the RAAC concrete issues across the public sector and media headlines on potholes, damp and mould in housing.

It isn't always easy to tell when is the right time to renew or replace an underground asset such as a sewer or a water main – or for that matter a gas main or a fibreoptic cable. A facile answer might be 'just before it breaks' or, better, just before it gets to a state where there is a significant risk of it breaking, but this is difficult to predict accurately for buried assets. And this doesn't get into the subtleties of the issue or take into account consequences for service to customers or the environment – a critical asset needs a much lower risk of failure than one where the consequences of a failure would be more local/manageable.

In many cases, the evidence is, at best, inferential: are water mains bursting more often these days? And if so what can we learn from the condition of assets where for whatever reason we have dug up the road?

A backward-looking solution to a dynamic future problem?

This lack of clear data means we lack the kind of robust asset health 'metrics' and a way to decide precisely how much money to spend on maintaining assets and where or how best to spend it. That has, many argue, tempted Ofwat to relapse back to a fundamentally backward-looking econometrics-based approach, enabling the regulator to look tough and reject claims for increased spend. In turn this tends to undervalue work by companies to develop forward-looking asset management plans and build in the kind of flexibility where it is hard to provide a hard value for money case.

(More formally, the 'methodology' for deciding how much asset maintenance spend is allowed is not simple, but in essence it involves two components. First, it uses 'econometric models' and 'cost assessment' which compares maintenance costs and expenditure across companies and uses past experience to predict future requirements. Second, there is an attempt to assess asset maintenance needs through a forward-looking assessment of risks informed by companies' asset management planning and risk assessment tools.

There has always been a tension between the backward- and forward-looking elements of Ofwat's cost assessment, and therefore a fair amount of regulatory judgement and jostling involved in arriving at what is the correct spend – but Ofwat's internal psychology tends more widely to reach for the comfort blanket of econometrics! And all of this is determined largely separately to future 'enhancement' spend, company delivery incentives and long-term delivery strategies/scenarios).

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Changing pressures and opportunities

While Ofwat has made positive noises about doing more to allow for evidenced pressures from climate change/wider forward-looking pressures – and there were what appear to be genuinely open discussions in the run up to the final methodology for PR24 – in my view what has actually been done remains a sticking plaster. I'm not sure that the answer is to tack another bit on to an already complex approach – a systematic regulatory tendency across utilities.

Improved telemetry and machine learning are now offering major improvements in our ability to understand patterns of asset condition and performance, and therefore to better focus our maintenance. They are also moving much more quickly than technology in water usually does. Sustainability First have argued before that regulation across utilities tends to lag well behind technological change and this does seem to be a real issue here. Furthermore, investment in the telemetry which could improve this knowledge is often placed in a different 'pot' to and determined separately from the improved asset maintenance it seeks to enable.



Furthermore, Ofwat has – rightly – required the companies to plan their major spend over the next 25 years, using 'adaptive' planning to estimate when key decisions should be made. But while an asset which will be needed in its current form for longer will clearly require more maintenance than one which is set to be superseded by a new asset (or indeed a new technology or nature-based solution), it is difficult to see how this 'feedback loop' is covered in the current methodology.

Next, while some effects of climate change may reduce future maintenance needs – fewer big freezes may reduce winter pressure on underground assets – there may also be more soil movement in hot summers and demand for water will rise in heatwaves, which would increase pressure in some water mains and a greater risk of pipes bursting.

Finally, pressures on supply chains are currently close to an all-time high, particularly in the south and east. It will be harder to find people to do maintenance, and unit costs of maintenance will be higher than in the past with more variability across regions. We need to involve the supply chain more, and plan forward expenditure better, to avoid simply creating an inflationary spiral.

Some of this comes down to the burden of proof – by its nature it is not possible to predict climate change with any real certainty. But we have indicators of what to expect. And waiting until changes happen and then coping is not resilience in any meaningful sense of the word. I would argue we need a step back to look at the forward pressures and opportunities, unencumbered by the dead weight of specific regulatory approaches.

More broadly Ofwat needs to think more creatively about how it can better incentivise 'good' or 'public value enhancing' by the industry over the long term – through repeated price review cycles – in capital maintenance, asset management and planning. My Sustainability First colleague George Day (who was Ofwat's network regulation director back at PR09) argues that companies should be incentivised to build up a track record of revealed accuracy and 'good behaviour' in asset management practices. And they should be better rewarded for thinking innovatively about how to deliver reliable service as climate and demographic pressures grow.

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Summary

Measuring asset health isn't easy. There is some highly valuable work to improve the metrics and costs base for asset health. And we shouldn't forget a variety of past work to develop sound principles, including the groundbreaking work done 20 years on the 'common framework' for capital maintenance planning (see for example, Adrian Rees' useful survey "Déjà vu all over again" in The Water Report July/August 2023).

But we need to consider the case for a significant shift in regulation and company behaviour based on a more fundamental, and strategic, assessment of the pressures that water assets face and how technology may revolutionise things. This should lead to consideration of how the regulation of asset health ought to be conducted in a forward-looking fashion, joining up between 'enhancement', baseline, long term and asset maintenance decisions. An obvious starting point would be an exercise to envisage what the future might hold for asset pressures, knowledge and management and work back from there.

By Martin Hurst, who was a senior civil servant on water and environmental issues for 20 years, and is by background a professional economist. This article derives from his work for Indepen and Sustainability First, where he is an associate.