

Draft Water Resources Management Plan 2024

Annex 14: T100: a blueprint for a water-efficient culture for Southern Water customers

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1. Overview

1.1. Water resources: rising to a unique challenge

The South East region is unique in the water industry because of the pressures we face balancing the supply of water with the demand for it. We must keep up with the need, but we must protect our natural environment at the same time. The problem is, we're squeezed at both ends: constrained by supply challenges and rising demand.

Our supply is affected by the environmental and ecological impact of our own water abstractions, making it increasingly unsustainable. Climate change in the form of heatwaves and extreme droughts is further affecting the supply of water: the latter is forecast to become 50% worse than our current water systems can handle.

On the demand side, the resident population in the South East is predicted to increase by 15% by the year 2040. According to the WRSE, the region will need to find an extra one billion litres a day at least, over the next 30 years, just to keep up.

In the meantime, we're still living through the significant impact of the extraordinary COVID pandemic, which has led to a leap in consumption – averaging at 8% higher than forecast across the entire water industry. As a result, we anticipate our AMP7-end PCC actual to be much higher than the original WRMP19 forecast. In fact since WRMP19, this has meant that the volume we need to save by 2040 to achieve T100 increased from approximately 60MI/d to over 89MI/d i.e. a 48% increase.

Meeting the increased demand for water at the same time as maintaining a sustainable and vibrant environment is a tough balance. Managing the demand is central to our strategy, but the scale of the challenge isn't just unique, it's enormous and has encouraged us to be bold.

However, we also have to balance ensuring we can meet supply-security with the risk of demand not reducing if behaviours don't change. As set out in our Plan taking all factors into account and the analysis we have undertaken on delivery risk, the demand forecasts in our Plan are built on achieving a PCC of 109l/p/d by 2040. This out-performs the National Framework target and aligns to the overall WRSE regional plan, however it adopts a slightly higher pcc than T100 for planning purposes.

As demand reduction is so critical to meeting the environmental and security of supply needs, we do not believe the Target 100 (T100) vision should be extinguished. To reflect this the optioneering and delivery plan on household demand reduction has retained the long-term ambition of meeting T100.

We have retained this ambition to reach a higher target than that set by the government and that necessitates designing a blueprint for inculcating a water-efficient culture without placing supply-security at undue risk. Such a blueprint has the potential to lead the way across the entire water industry.

Our Target 100 (T100) ambition is the blueprint by which we intend to create a consciously water-efficient consumer culture to help meet our supply-demand challenges. It is a coherent behaviour change programme driven by behavioural science insights drawn from ethnographic studies, nudge experiments, smart meter trials, and – pertinently – by hard evidence. Our 'test-bed' will test ideas on a small scale and fully evaluate the impact on water use reductions to learn from findings and only scale up when the evidence shows the innovation option reduces water use and can be sustained.

T100 is an assiduously-planned blueprint for individual social and cultural change – designed to change lifestyles. It will take time and by the very nature of long-term planning, the intrinsic unpredictability of behaviour change, the complexity of the landscape within which we're operating and the uncertainties that all these factors engender, we know that for the plan to be good, it needs to be both strong and elastic.

Before we move on, let's pause and imagine our region in a couple of decades if we didn't take this approach. Demand has continued to rise and we are facing ever greater restrictions as our natural habitat has deteriorated and, as a result of our inaction, a ready supply of water is in serious jeopardy for future generations. We could take a different approach right now: plan for greater effluent reuse, or bigger and better desalination facilities to keep the same volume of water in circulation. Both these options, however, risk taking a higher toll on the natural environment and customer bills.

Below, you'll find our preferred plan for delivery. It's a comprehensive programme to reduce consumption and will play a vital role in our unique demand-supply challenge. We believe – and will demonstrate – that this plan of action represents the best value for the customer, though it is not without a significant degree of risk. It's also the most conducive to the sort of thriving environment we need for the good of society and the planet and a journey where we will need to adapt along the way.

1.2. Addressing WRMP24 feedback

The purpose of redrawing and detailing our T100 consumption reduction plan has been twofold: to address the more complex landscape we find ourselves in post-pandemic, and the very useful feedback from the EA and Ofwat during the WRMP24 pre-consultation process.

We have worked hard to do better, to produce a structured programme driven by a strategic purpose, behavioural science insights and hard evidence. In this document and its companion (Draft Water Resources Management Plan 2024: Annex 15: T100 and Non-Household Option Identification Technical Plan), we have striven to demonstrate our options and rationale and to show the trail of evidence and logic that has shaped our thinking. You will see that we lay out our plans – including the assumptions, risks and uncertainties alongside mitigating actions – in transparent and granular detail and build our case around why we believe the plan is feasible and that we can deliver on our promises.

We are keen in the consultation process to seek views on the balance of our approach. In particular if we should plan on meeting T100 alone and the associated delivery risk as we currently understand it, or, as in this Plan, have a demand forecast aligned to the National PCC targets but continue a programme to see if we can confidently achieve the T100 profile allowing the future plans to adjust based on the findings.

1.3. Commitment and track record

We're already industry leaders on per capita consumption (PCC). When the whole industry saw consumption rise, on average by 10.4%, during the pandemic, ours was one of the lowest at 7.4%. In the operating year 2020/21, water use was 137.5 l/h/d inclusive of the pandemic effect. This was against an industry average of 146 l/h/d and the highest at 176 l/h/d. This is, no doubt, due to our historical efforts encouraging water efficiency, as well as our high household meter penetration. On the latter, we're the second highest in the industry, in fact, with 88% of households already metered by the end of AMP5.

On leakage, we rank seventh in the industry per km of supply network, at 17%, against an industry average of 19%. The best performing in the sector is at 13%, and the worst at 24%.

WRMP19 T100 promises: an education

In WRMP19, we publicly committed to help customers to reduce their personal use of water (PCC), bringing it down to an average of 100 litres each a day by the year 2040. T100, as set out in WRMP19, consisted of four main pillars: a programme of increasing meter penetration and smart metering trials, water efficiency home audits, proactive customer contact and incentivising water-efficient behaviour, all designed to reduce the amount of water used in households.

The activity we carried out in the first half of AMP7 turned out to be highly educational in terms of what we were, and weren't, able to achieve. The best results came from home audits offering water-saving tips and fitting efficiency devices in water-stressed areas. We completed 8,774 home audits and water use reduced from a pre-Covid high of 36 litres per property per day to 24 litres per property per day in 2021. Up-to-date figures show an average saving of 27.5 litres per property since we began the programme in 2015.

Home audits are clearly an effective behaviour change activity with guaranteed results that we would wish to continue, but they come at a very high unit cost (in comparison to other possible activities) and for a variety of reasons, only one in 10 eventually leads to an actual visit, making the rate of delivery frustratingly slow. It's also critical to note that we don't yet have any notion of the fall-off rate, nor longevity of the change.

Our customer contacts comprised of promotional stalls run by a third party at general non-water-specific events in the region. As a direct result we've amassed a bank of anecdotal insight into what customers will, and won't, engage with, such as disliking any language around giving something up. The stall-holders also signed householders up to the online water-saving advice app GetWaterFit. By the end of August '22, 12,000 people in the region had signed up.

It's been difficult, however, to measure the effectiveness of such events. The audience wasn't targeted nor were behavioural science insights used to elicit behaviour change. GetWaterFit is also not rooted in behavioural science principles and there's no evidence that signatories have reduced their consumption.

We also ran two ad hoc water-saving advertising campaigns raising awareness in water-scarce, postcode-led, hotspots across the winter and summer seasons from 2020 to 2022. Of those who said they were aware of the first campaign, 65% said they were taking action to reduce water use. The second resulted in an estimated water reduction of 2.64 Ml per day.

Their effectiveness was measured in typical advertising style via a focus group a short time after they had run. Again, it was difficult to assess effectiveness over time, and the audience wasn't selected based on their receptivity to taking positive action, nor was the content or messaging based on behavioural science insight designed to elicit actual behaviour change. Also, leaving it up to the customer to take unilateral action will not guarantee us the change we must deliver.

Our plans for smart meter installation have begun with a trial this summer to test an assumption that we can reduce water consumption by a further 3-5% simply by giving people data on how much they use and behavioural nudges. Clip-on 'smart' meter devices are being installed in 1500 homes in Southampton, Andover, Midhurst and Brighton. This corresponding personalised usage data will be given to customers. We will, then, take the opportunity to innovate, testing customers' engagement levels against different behavioural nudges, incentives and prompts that we will communicate via the behavioural science online platform Advizzo (linked to the trial meter data).

1.4. PCC levels across the AMP

We had gone into AMP7 expecting to hit our 2020/21 target of 127 l/h/d, but then the pandemic struck and suddenly everything changed. Instead, consumption shot up to a PCC of 138.5 l/h/d and forced us to provide an average of 2.3% more water into our supply network. The forecast for year 2 (2021/22) is 133.6l/h/d, a drop of four litres per head per day, but four litres over of our WRMP19 forecast.

What's more, the devastating effects of the pandemic on water usage – a result of the shift in working pattern from office to home and a universal increase in hand-washing – stalled progress on our home audits because of social distancing. As the only initiative with demonstrative evidence of effective behaviour change, albeit untested over time, the level of uncertainty connected to the effectiveness of T100 had reached a tipping point and we were forced to stop and take stock of the entire programme.

1.5. Clarity and coherence amid uncertainty and complexity

Water usage has overturned forecasts and gone up. Workers have not returned en masse to the office and may never do so again in the same numbers. But water consumption has to come down to meet the unique challenge of our region. We remain committed to the principle of T100 by 2040, though achieving that reduction has become a lot tougher.

T100 must become drastically more effective. It must evolve.

We are in the thick of re-building T100 as uniquely focused on progressively getting customers to change their behaviour, so they are consistently and committedly using less water.

The future T100 will be based on an inherent understanding that it is a progressive behaviour change programme with an overarching goal of creating a culture of water efficiency. As such, it will be rooted in behavioural science insights and hard facts that prove an initiative can work, is feasible to deliver and that water-saving change can be measured and sustained over time. T100 will need to be a co-ordinated, structured plan with strategic oversight to make a much greater impact.

We have begun by extending the programme to include all key customer segments who take from the supply network – so that's non-householders as well as householders – which accounts for another 22% of water users and has been conspicuously missing from our demand reduction programme hitherto. This move has the added benefit of making our efficiency initiatives more cost-effective as they can be applied equally to both types of water user – especially at times when there's a shift in lifestyle pattern such as the slow return from home to office-working following the pandemic. It's also an opportunity to save water by addressing the current discount tariff for large users. Not long after our own decision, Defra proposed a 9% reduction in non-household demand by 2037 and Ofwat required the sector to combine per capita consumption with business demand and leakage into a single water demand performance commitment. Therefore, we are moving to address Distribution Input (DI) through demand management, alongside leakage, recognising that this includes reducing both household and non-household demand.

We are mindful, however, that not only is there no silver bullet to water efficiency, but we are operating amidst a complicated landscape, many aspects of which are outside of our control.

We know from behavioural science insights that behaviour change is unpredictable, and that it is predicated on people being aware of the problem and the solution being easy enough to encourage the desired behaviour change. However, we know from our Perceptions of Water Scarcity survey, carried out in June

'22, that our customers aren't primed for significant behaviour change as only a minuscule 4% are aware there is a water scarcity problem in the region.

The pandemic has made forecasts more uncertain as well as pushed back our starting point. Other factors, such as the rising cost of living and energy, and increasing heatwaves have the potential to make the most thorough and considered plan impracticable.

We're also acutely conscious that the WRMP19 account of T100 was based on several assumptions that – with our growing understanding of behaviour science – are no longer credible.

It has taken an appreciable understanding of the full complexity of the landscape, and its potential to disrupt our plans, to build a programme coherent and elastic enough to navigate it as far as is reasonably possible.

Also, there is no precedent for successful behaviour change in the water industry, and as T100 goes beyond the government target for PCC, we must write the blueprint.

2. Developing strategy: the blueprint for a water-efficient culture

2.1 Vision and objectives

We want to create a future where our residents are water stewards: fully aware of their water environment, feel connected to it, and willingly play their part in protecting and preserving it.

We intend to lead the industry on minimising raw water abstractions by reducing the amount of water consumed per person.

T100 is a vision that by 2040 we will have reduced consumption of water on average to 100 litres per person per day. Whilst to ensure our plan appropriately balances risk, we have a planning target of 109l/p/d, we do not think our delivery plan should extinguish this vision.

By 2030 we will have finished replacing all our Visual Meter Read (VMR) and Automated Meter Read (AMR) meters with smart meters (1.36 million households), delivering an average estimated 4% reduction in household demand, aiding us to hit our T100 goal by 2040. This target may extend slightly into AMP9, and is subject to the completion of PR24 planning.

Simultaneously, by 2040, we will have reduced the number of leaks in our network by 50%, with an interim target of 15% by 2025.

Altogether, this is how we'll support our mission statement of Water for life.

2.2 Designing the blueprint for water efficiency

The bald fact is that we're asking our household customers to use almost 40 litres of water less every single day of their lives, in perpetuity (that's about a third less from a starting point of 138 l/p/d to get to 100 l/p/d). It amounts to a wholesale change in lifestyle.

It requires our customers to become conscious water stewards who perceive today's standard use of water as excessive when we look at the future challenges on availability of water. For that kind of seismic shift to happen, behaviour change is needed at an individual, social and cultural level. But we cannot impose a lifestyle change on customers. It has to come about willingly. They have told us, via qualitative engagement work, that they want to save water and protect the environment, but they want it to be a quid pro quo effort. They expect us to lead and offer practical help.

Our job, then, is to encourage and influence significant behaviour change and help customers to use considerably less water by making it easy.

As such, we have modelled the T100 blueprint on behavioural science principles to influence and encourage customers to live differently.

We have commissioned ethnographic studies to find out how people currently use water in their everyday routines and how those behaviours become habits in order to get vital intelligence for designing the right sort of water-saving options (such as behavioural nudges, cutting-edge technology and water-saving devices) to help make it easy for customers to use less water.

We have intentionally looked at every possible option to help customers use less water through their own eyes (in keeping with our Customer First strategy) so we can encourage and influence in a way that works for them.

We've formulated a real-world testbed to test and prove the effectiveness of an option in conditions like the environment in which they would happen naturally. We will test options with the two most receptive segments in our customer base. We want to be sure that when a customer goes to the effort of consciously changing their behaviour, they can be sure they are genuinely saving water and feel motivated to keep up the habit.

The entire design of the blueprint has followed a rigorous process, starting with in-depth research that generated a list of almost 40 water-saving options. Each was then gauged against its potential to save water, its benefit against cost, and how feasible it is to deliver based on an indicative confidence score. For more on the process, please see our companion document Draft Water Resources Management Plan 2024: Annex 15: T100 Technical Report.

2.3 T100 Strategy: Applying 7 'catalysts' through 3 'approaches' across 3 customer groups

The programme is structured so the customer makes the journey to a new lifestyle from a starting point of understanding why they need to change their habits with water, to the practicalities of how they can use less water today, tomorrow and in perpetuity. The T100 strategy consists of seven key 'catalysts' that have been identified to help deliver this vision through three approaches working together to embed a water efficient culture across three customer groups as shown in Figure 1 below. The catalysts will accelerate the customer's journey and enable them to change current behaviour by gradually adopting water efficient practices over time and supplemented by the right products to make this journey possible. The catalysts are essentially the T100 workstreams planned that will be delivered by the approaches required to build a programme to effectively manage the uncertainties and complexities in bringing behaviour change in an ever-changing environment. Finally, these catalysts and approaches will be applied across all Southern Water customer groups as is needed for an all-encompassing behaviour change programme.

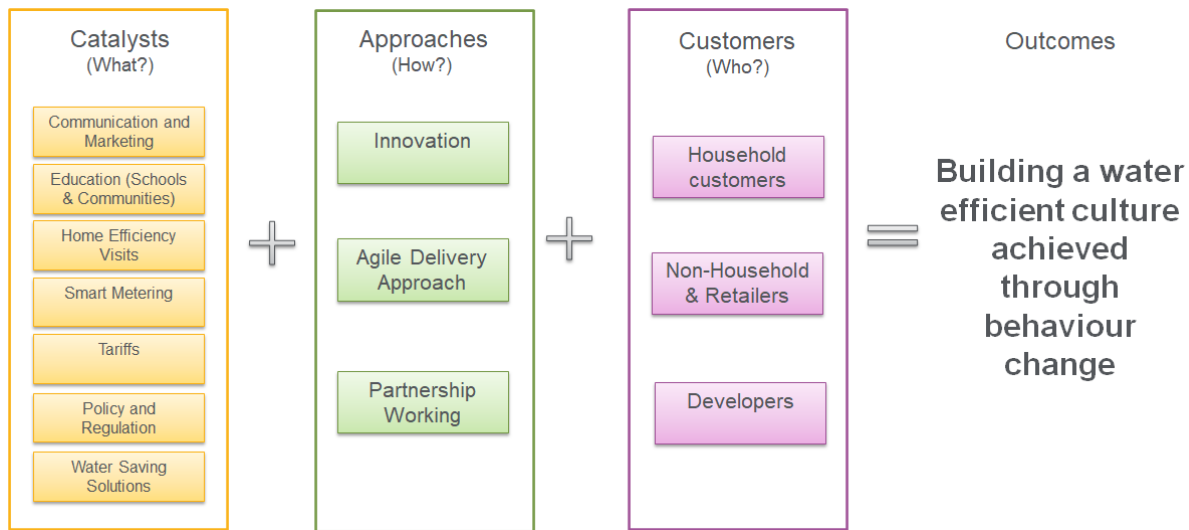


Figure 1: T100 will build a water efficient culture through behaviour change by using the catalysts (what?) on our customers (who?) through the approaches (how?).

T100: catalysts

Our options analysis pin-pointed seven catalysts that are essential to help bring about a consciously water-efficient culture against the timescale to which we’re working. These are the ‘what’ elements of our delivery programme: the necessary components we need in place to make change happen.

Some are interlinked in terms of dependencies. For example, it would be foolish to introduce differential tariffs without a communications and marketing campaign to explain why they’re necessary and would be impossible to administer without data from smart meters. Equally, creating a water-efficient culture in perpetuity would be difficult without an education programme that targeted the young, and policy and regulations that constrained housing developers and appliance manufacturers, for instance, from water-inefficient practices. Home audits and our water-saving solutions are effective on their own but add in smart meter data and they become dramatically more so because they can be tailored directly to the customer – household or non – for even greater water savings.

The T100 programme has evolved from the four pillars-approach in WRMP19 (extending meter penetration, home audits, proactive customer contact, incentivising behaviour), optimising and working up each into a full blueprint made up of the best value options, the right sequencing of activities and their dependencies, a need to build capability, short and long-term priorities, and a risk assessment.

The seven catalysts are as follows:

1. Communications and marketing:

A multipronged awareness campaign up to 2040 will form the backbone of the customer journey, taking them from the ‘why?’ of the programme to the ‘how?’ – from the unaware or uncaring to the engaged steward. Content and messages will be based on behavioural science insights to help generate actual behaviour change and will be communicated in the right way, at the right time, and as often as possible. Activities from the original T100 pillar- Proactive Customer Contact have been embedded and further enhanced in this catalyst.

Campaigns up to 2040 will be structured into three phases: building awareness of water scarcity and the need to use water wisely; establishing an efficiency culture as the norm; and celebrating and encouraging behaviour change. We will leverage on the recent drought conditions to build awareness of water scarcity in the south west region and use behavioural science to encourage customers to use less water during these conditions. We are also looking to align our communications with national campaigns and collaborate with key parties to produce a consistent message through our media and digital channels.

A local advertising campaign will begin in 2024 and run progressively every year thereafter to maintain the focus. It will prioritise areas based on network resilience, PCC forecasts and reputational benefits. A range of channel-specific content will be designed for a multi-channel campaign with actionable tips to bridge the gap between 'engage', 'explain' and 'assist'. It will take a seasonal targeted approach.

In addition, we'll run an awareness-raising, targeted, door-drop and email campaign in response to hot weather, or any other trigger that drives up demand (such as lockdown), with the contents and messages informed by awareness levels.

We'll also run long-term, multi-channel campaigns across AMP8 highlighting the financial, social and environmental benefits of using less water.

- 2. Smart meter technology:** for our plan to work, it's critical that customers can see for themselves how much water they use, made possible by smart metering. The original T100 pillar of increasing meter penetration has now been revised to smart metering as actual data can be an incentive for customers to reduce their consumption and bills entirely unilaterally. The accepted wisdom within the water industry is that the meter effect results in a reduction in consumption of 3-5%. That means simply by virtue of being in place, the customer becomes more vigilant about how much water they use and systematically begins to cut down. What's more, we can increase the effect, significantly, by using the same data to target customers – such as high users – by intervening with tailored nudges to specific situations or seasons, such as when someone is using lots of water, to make them aware of it and to consciously change their water-using behaviour and save money at the same time.

Smart meters also give our customers a heightened personal experience with us as they learn to trust that their bills are accurate and discover the technology can detect and alert them to leaks in their own pipework. They also pave the way for new types of tariffs that can be based on actual meter readings. We're currently trialling 1500 smart meters in a water-scarce area, testing the 3-5% meter-effect assumption, and linking them up to an online platform so we can test interest through different engagement approaches and measure smart-data-led nudges and how well we can affect behaviour change.

For more on the smart metering business case, please see our companion document Draft Water Resources Management Plan 2024: Annex16: Smart Metering.

- 3. Tariffs:** applied differentially, such as a summer/winter tariff or a rising block, tariffs are a powerful incentive to cut down water use with both household and non-household customers. They come with the built-in incentive of reducing bills (an original T100 pillar). Differential tariffs have the potential to single-handedly bring in the most significant water savings of all our options but introducing them without the necessary foundation work would be disastrous. Customers would absolutely need to be primed in advance, be ready for and accepting of this type of water-saving measure. The approach must be carefully planned and established across three phases in time: building awareness and readiness; smart meter roll-out alongside tariff pilots; and an evidence-based introduction to tariffs over time.

We're also introducing tariff incentives to non-household customers, such as a scheme we're running right now in water-scarce areas where we've had to bring in restrictions due to drought conditions. We're asking businesses to use between 10% and 25% less water than they typically do for the three-month period from September to November '22. In return, we'll pay the equivalent percentage of water saved in their wholesale charge. We've taken this approach, as opposed to imposing further restrictions, to encourage and influence our customers to behave differently and start to save water willingly.

- 4. Water-saving solutions:** these are the 'tools' we'll give our customers to ease their journey towards using less water. They are the 'how?' part of the customer's journey and come after they have understood the 'why' of the programme. These tools (an outcome in themselves) will be either water-saving products or solutions, such as behavioural science-based nudges. They can be motivational (helping the customer to use less water through choice) in the case of a nudge based on their personal water use data, or constraining (forcing the customer to use less water) such as with a water-efficient showerhead.

For example, as part of our 'leaky loo' intervention, we'll use the data from smart meters to find households that have a continuous flow. We'll intervene with simple measures such as leak strips or with food dye so the customer can work out whether it's the loo that's the culprit. Once we know for sure, we'll arrange for a repair or replacement of the faulty mechanism at no cost to the customer. A solution like a flow restrictor will enable water efficiencies for the non-household sector by reducing pressure without impacting the user experience, although a known product we are exploring partnership mechanisms with retailers. Another solution like 'Goal Setting interventions' for reducing personal water use helps trigger new behaviours, and helps you sustain that momentum in life by promoting a sense of self-mastery and even competition with peers.

- 5. Home audits:** Another original T100 pillar, we're continuing with our proven water-saving home audits and extending them into non-household buildings. As smart meters are installed, a specific smart audit programme will run alongside existing home audits, using vital information from smart data to target customers based on opportunities to save water. We are on track to deliver 45,000 home visits in AMP7, despite the impact of Covid, and currently exploring opportunities to increase the effectiveness of visits by reviewing our current process and partner contracts to support this effort. The latter are expected to bring even better results than we've had hitherto. We intend to complete 10,000 audits a year from the start of the smart metering programme in 2025/26.
- 6. Education:** we are commissioning classroom resources from curriculum specialists on water-saving and living efficiently for primary and secondary schools to lay the foundations for a future where a water-efficient culture is the norm. Resources include assembly packs, competitions, virtual tours, classroom packs, site visits including tour packs and takeaways for the family at home, such as a behaviour-change tools. We're also extending our home audits programme into the education sector as part of our non-household initiatives.

For example, we've started working with a high water-consuming junior school in Southampton alongside our water retail partner and service provider. We audited the school's water use with meter loggers and have then used that intelligence to fit a total of 82 flow-restricting devices: one in each classroom, in staff and children's toilets, the kitchen, and in an after-school area. We intend to cascade what we've learned in this trial to other high non-household users.

- 7. Policy and regulation:** we're working with government policymakers, regulators, other water companies and wider stakeholders across the UK to promote and lobby for policies that support greater efficiency. For example, we'll work with retailers to push for standards for efficient water use in businesses, house-building and other sectors as they act as powerful incentives because they usually come with penalties. We'll also lobby for mandatory water labelling of appliances through legislation.

For a full list of options under each catalyst and an overview of timeframe, the reason for selection and overall summary, plus costs, please see the companion technical document Draft Water Resources Management Plan 2024: Annex 15: T100 Technical Report.

T100: approaches

We have thought laterally, creatively, and scientifically to come up with the three most effective ways of working that will bolster our catalysts and bring about the progressive behaviour change we need for a wholesale shift in lifestyle. These represent 'how' we'll work on our plan of action.

1. **Innovation:** every water-saving solution we come up with will go through the same creative process: ideation, experimentation, evaluation and innovation. The jumping off point will always be a piece of vital behavioural science insight. For example, our innovation team Bluewave, responsible for this approach, has commissioned behavioural scientists BVA to carry out ethnographic research into how our customers typically use water when they shower, flush the loo and when they garden. The objective is to identify what hinders and what helps our customers to use less water. The research is being done with the two most receptive segments identified from our customer base: the 'savvy and settled' and 'time-poor and receptive'.

Once we have those insights, Bluewave will put them through the ideation phase to come up with the best and most-cutting edge water-saving products, services and technology ideas. To help come up with the very best, Bluewave has partnered up with local innovation hub Plus X, a network of thousands of start-ups, to 'horizon-scan' for the future of water-efficient products and technologies, so we are at the cutting-edge of water efficiency. Once an idea has been formed, it will be put to the test.

2. **Agile delivery:** we are testing all potential solutions on a small scale and doing it iteratively, learning from the findings, and only scaling up when we have the evidence an idea works. We have constructed our own innovation test-lab, a mechanism for rapidly testing ideas put forward by Bluewave. We'll learn, review and course-correct as needed at small scale, find the very best opportunities and ramp those up in size in an effort to deliver best value for the customer and for the greatest effect. The approach is designed to avoid launching solutions that may not work and to quickly and accurately measure which ideas will deliver us the biggest water reduction. On a larger scale this approach informs our intention to review the programme annually and reforecast as required for maximum effectiveness and to give the customer the best value for money.
3. **Partnership-working:** we're working with stakeholders at a regional level to reap greater dividends on efficiency measures and to identify and allocate funding for powerful community-level players to help establish a water-efficient culture from the bottom up. We'll fund water efficiency projects that can prove savings in potable water and big and small projects such as rainwater-harvesting loos, drought-tolerant gardens, water butts in community allotments, educational displays in schools, and harnessing new technology to help people use less water. At the national level we plan to influence regulation to increase awareness of water scarcity and pave the way for future initiatives such as differing tariffs.

We are also working in partnership with the South East and Wessex Rivers Trust on a joint school education trial, 'Our River, Our Water', for primary schools starting with outdoor sessions on the River Dour, River Dun and Gatwick Stream where children take part in a range of outdoor activities, all linked to the National Curriculum, including follow-up classes resources and a take home leaflet.

T100: Customers

These are the people whose behaviour we change to bring about the water-efficient culture that we need. It's now all-encompassing covering households but it's also covering new, and exciting customer segments that



emerged from our ambitious and far-reaching perspective- namely the non-household, retailers and developers. The latter has come about as a result of a holistic look at who can change the way we live for the next generation and make water-efficiency a permanent feature in our lives. We expect our conversations with this sector to reap rich dividends in terms of what we can achieve for the future of our water network, the built environment, and a permanent change of lifestyle for our residents and workers.

1. **Household:** Residential householders consume 58% of all the water that enters the supply network. They represent our traditional focus for efficiency efforts, and our customer insight work tells us there's already some message fatigue. We also know we have a lot of work to do with this group to overcome past reputational issues that continue to linger and hamper much good work. The heaviest focus of our activities will remain with this group. We'll target them in an increasingly customised way with smart data and take them on the journey from awareness to conscious change with the help of our range of water-saving solutions
2. **Non-household and retailers:** we are seizing the opportunity to extend the reach of T100 into a market that consumes roughly a third of all water in the region, giving us a greater pool from which to reduce the demand, simultaneously allowing us to support retailers with their new accountabilities for water efficiency.

We can also easily transfer what we've learned from the household sector into non-household for some quick wins. As such, we'll deliver water audits across social housing (doubling up as part of our efforts to ensure water bills can be afforded by the most vulnerable), schools and government, targeting old, inefficient buildings for greater water savings. We'll also double-up our marketing communications awareness and readiness campaigns with targeted messages for specific segments of the non-household sector.

We've developed a specific six-point plan for engaging with non-household customers:

- A smart meter installation programme similar to households, followed by interventions based on data from their billing to prompt less water use
- A smarter tariff programme to incentivise lower water use. We'll also introduce a phased removal of the discount tariff for large users
- An annual community-based Water Efficiency Fund. We will invite and fund bids made by communities for water-efficiency projects
- An annual Bid Assessment Framework Fund. We will invite and fund bids made by retailers delivering water efficiency projects for their customers
- An annual Water Recycling Fund. We will invite and fund bids made by retailers willing to replace potable water with treated effluent – where it's safe to do so – such as, golf courses for watering the grass; washing commercial vehicles, such as buses; or, for road cleaning
- A programme of work to reduce the volume of potable water used in our own Sewage Treatment works.
- And a communication and marketing programme targeted for the various non-household segments.

For a full list of options and an overview of timeframe, reason for selection and overall summary, plus costs, please see the companion technical document Draft Water Resources Management Plan 2024: Annex 15: T100 Technical Report.

3. **Developers:** With an increasing need for new housing, it's more important than ever for new homes to be as water efficient as possible, which provides an opportunity for future household customers to start at a lower PCC. Working with developers provides the best opportunity to think about fitting water saving products in building design; with opportunities for water efficient products and grey-water recycling.



We are developing strategic partnerships with key stakeholders in the housing development arena to create fundamental shifts in how housing emerges, what our built environment looks like and the future resilience of our network. Land promoters and developers can shape the way we live and consume water in years to come, thereby enabling the journey for our household customers from a more efficient starting point.

We're also talking to policymakers to bring about the changes we need to enable the transformation of our networks and developing responses to water neutrality consultations and unlocking developments to make them viable for water efficiency. And we're developing effective contributions to local plans and giving clear guidance on planning conditions to enable a resilient water future.

3. Process of developing the options

3.1 Interventions based on cost versus benefit and confidence scores

We have calculated the cost of more than 40 options against their benefits (effectiveness at reducing water consumption) and allocated an appropriate confidence score of between 1-5 to each idea to give a clear indication of the level of risk attached to its effective delivery.

In summary, this analysis has confirmed that home audits deliver known savings and are therefore programmed for AMP7 to deliver quick benefits. It has revealed that the net cost for smart meters is lower than that of maintaining current meters. Smart meters also come with the added benefit of helping to detect leaks and generating accurate bills. Their installation is planned for early in the programme as they're a catalyst for longer-term action. Tariffs are a high benefit in relation to cost but are placed late in our programme as they're dependent on smart meter data and customer readiness. Communications awareness-building campaigns have low unit costs and the potential to deliver significant savings. They will run across all the AMP periods and start early in the programme to instigate wider behaviour change for the future. Water-saving products such as colour-changing shower heads, products to fix leaky loos and garden devices have a large potential for reducing water use; all three are designated for early in the programme to promote behaviour change.

The budget required to deliver the programme each AMP to 2040 is around £25m to £30m for the household and around £135-150m CAPEX for deployment of the smart metering programme (which also provides the basis for customer side leakage reduction but included in full here). A further £15m-£17m as OPEX is required to deliver the total non-household water efficiency programme.

For a full list of options and an overview of timeframe, reason for selection and overall summary, plus costs, please see the companion technical document Draft Water Resources Management Plan 2024: Annex 15: T100 Technical Report.

3.2 Assumptions

For the purpose of our cost benefit and confidence score assessments, we've made the following overall assumptions and below these, a set of specific ones related to the performance of our catalysts. In each case, where assumptions are shown to be faulty in our delivery, our approach is to adapt and mitigate.

Programme assumptions:

- A PCC reduction to 100l/p/d by 2040 remains our ambition, with a planning assumption of 109l/p/d following the implementation of the activities planned in the Technical document.
- Customer behaviour changes as desired and predicted from initial work and water use goes down
- An annual programme of innovation trials validating all options against cost, benefit and delivery risk is required to understand the residual risk of non-delivery of outcome of planned options,
- The performance of T100 is reviewed annually and programme cost, benefit and to reforecast trajectory to 100l/p/d.
- Proposed programme assumes that an enhancement funding of around the same level as AMP7 (~£20m) and the appropriate funding for CAPEX for smart meter deployment in AMP8.
- There will not be a Covid type scenario or similar for an extended period that has a disproportionate impact on people's behaviour such that we saw between 2020 and 2021 that led to significantly higher water use.

Communications and marketing

- We can effectively reach our audience with an undiluted message that has not been undone or corrupted by any negative perceptions of Southern Water, or that we have mitigated against any reputation issues in relation to T100 messages.
- Our communications and marketing efforts are supported with water-saving campaigns at national level.

Smart meter technology

- We have installed smart meters across our estate by 2030
- We have put in place effective ways for customers to engage with their data and behavioural nudges that will lead to the behaviour change required.

Tariffs

- Baseline tariffs are set at a level that makes customers value water as they do other utilities
- Most customers react to differential tariffs by adjusting their peak usage
- The right data is available for block tariffs to be applied fairly.

Water-saving solutions

- Testing demonstrates that water-saving solutions work
- The solutions are easy for customers to adopt and they bring about sustainable behaviour change.

Home audits

- Extending the advice and device-fitting visits to a new set of high-water users continues to reduce volume to the same extent as with previous customers.

Education

- We can successfully raise awareness of water scarcity, its impact and the role we each play in saving it, to children and community groups in the region.

Policy and regulation

- A range of new government regulations will come into effect that reduce water consumption in existing homes through compulsory water-efficient devices, in the same way as new developments are required to build homes that consume no more than 85 l/h/d.

4. Options and rationale

4.1 The roadmap: a blend of the best over time

There is no one-solution silver bullet that can deliver the 30% reduction we need in household consumption by 2040 and another 9% for non-household by 2037. Hence, the draft programme is a blended approach based on balancing the cost in relation to the certainty of delivery, plus the necessary sequencing of dependencies needed to ensure future actions can be effective. The resulting programme is the best balance overall, as opposed to focussing on one single objective over another.

Our programme of action has been drawn up based on a triangulation of three pieces of analysis:

- Optimisation – the results of two processes: an options identification and analysis for T100, and the National Framework 110 pathways
- Cost-benefit – the relative unit cost-benefit of each option
- Balancing short versus long-term needs – identifying those options that are needed to develop long-term behaviour change and keep options open for future decisions

The draft programme lists the entire 40 options and the reason for their selection and timing. The options were, however, insufficient on their own to meet the total volume of water-saving needed to hit T100 by 2040. A new option has been added designed to develop an innovation programme to identify, test, evaluate and implement future options, both those that are yet to be determined as well as some of the 40 options identified that require a trial and a robust benefit assessment before future roll-out.

In addition to future innovations, we also have a plan to scale up our existing innovation trials, for example our 'jellyfish' device trial.

How the blend of cost, certainty and sequence works in action

As we roll out smart meters across the region, there would be very little benefit to be gained if we don't invest in customer communications. It's critical we engage with customers so we can reap the full benefits of the possibilities to cut down on water use.

We'll need to run communications campaigns to educate and persuade customers that water is scarce (why?) and that they need to use less of it and what they can do individually to cut down their own use (how?).

We know from customer insight that not everyone will immediately engage with their smart meter data, or the supporting nudge data, and some won't engage at all (~10%), at least, not until they really have to.

In fact, it's that time lapse between a customer getting their meter, them becoming fully engaged and finally seeing consumption coming down that we need to model so we can gauge and measure the progress and effectiveness of the intervention.

4.2 T100: key stages

Progressive behaviour change is a marathon not a sprint. It's complex and requires a phased approach for effective delivery. We have formulated the most optimum phases, as follows:

Phase 1: Lay the foundations

- Run data-led communications and marketing campaigns



- Deliver an education programme in schools and extend to universities to instil a water-conscious future generation
- Continue home audits
- Develop a pipeline of potential 'engineered solutions' to be tested for efficacy.

Phase 2: Become smart-ready

- Start programme of installing smart meters to enable tailored audits and to prepare for future tariffs
- Trial tariffs with household and non-household customers
- Continue education programme in schools and universities
- Continue communication and marketing campaigns
- Continue developing pipeline of potential 'engineered solutions' to be tested for efficacy.

Phase 3: Review and monitor

- Introduce phased tariff mechanisms into a – by now – water-conscious customer-base, enabled by smart meters. Expected to yield the greatest reductions
- Revise and continue communications and marketing campaigns, and education programme
- Discontinue home audits as they are no longer effective
- Monitor and take appropriate action on reaching 100 l/p/d now that high quality, up-to-date and decision-ready information is available.

4.3 Water efficiency and closing the supply-demand gap

We have retained our T100 ambition of 100 l/p/h by 2040 and have – as you see – put together a blueprint to deliver it. However, the many uncertainties and the highly unpredictable nature of behaviour change make it a very risky programme, as demonstrated by the unprecedented increases in demand as a result of external factors such Covid-19 and recent prolonged dry weather.

We have designed our plan to be both strong and elastic and, as such, it will contain built-in triggers that will alert us if, and when, we reach key points in the delivery where there is a reasonable risk of not meeting our 2040 T100 target despite all our efforts. To ensure our plan is appropriately balanced in our demand forecasts we have set a planning target of 109l/p/d by 2040. The work we plan to do will ensure we can make informed decisions at the next WRMP as to whether that should be retained or move back to 100l/p/d. Irrespective of any alternate pathway, our work until 2030 will remain unchanged as its objective is to set up the critical groundwork for efficiencies to come.

Ultimately, though, any long-term efficiency strategy is inherently high-risk as it is difficult to predict behaviour change due to multiple external and unknown factors. Despite this, we have set ourselves an ambitious and challenging target based on our track record to deliver the lowest PCC in the industry and our evidence-based structured programme which would bring the best innovation and ideas to tackle the challenge. We continue to work in parallel with our leakage, supply and customer teams to deliver the greatest efficiency and ensure any shortfalls are accounted for via a systems-based programme of interventions. This will deliver the best outcomes for our customers and the environment.

We will need to draw on all resources if we are to ensure resilient water resources for generations to come.