



Water Resources Management Plan 2019

Non-Technical Summary

Issue No. 1

Project Owner: Alison Murphy

Project Manager: Tom Kelly

Prepared by: Alison Murphy

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Introduction

We want to provide a great service to our customers, which is sustainable for generations to come within a water-stressed area. Our water resources management plan is designed to deliver this sole objective.

We are a water supply company that provides 160 million litres a day to nearly 707,000 consumers across Surrey, London and parts of West Sussex and Kent. Around 85% of our supplies are pumped from groundwater sources, with the remaining 15% taken from Bough Beech reservoir which is filled from the River Eden in Kent.

In this plan, we set out our proposals to meet forecast demand for water supplies over the next 60 years, starting from 2020. This will be an update to our current plan which covers the 25-year period from 2015 to 2040.

We operate in an area classified by the Environment Agency as being under serious water stress. We face a number of future challenges and uncertainties: increased demand from a growing population which is forecast to rise to around 1 million by 2080; the availability of raw water sources likely to reduce due to climate change; the need to mitigate the impacts of our water abstractions and treatment operations on local rivers, wetlands and the wider environment.

We have assessed our ability to meet the demand for water supplies during a severe drought (one that is predicted to occur once every 200 years), as well as the worst drought on historical record in our area. We also consider the needs of the wider region by aligning our plan with that of the other water companies in south east England, so that a robust and best value solution can be developed.

We recognise that to improve both resilience to future droughts and meet the needs of our customers we need to work closely with all our regulators and stakeholders to build a balanced plan that achieves these outcomes.

Forecasting supply and demand

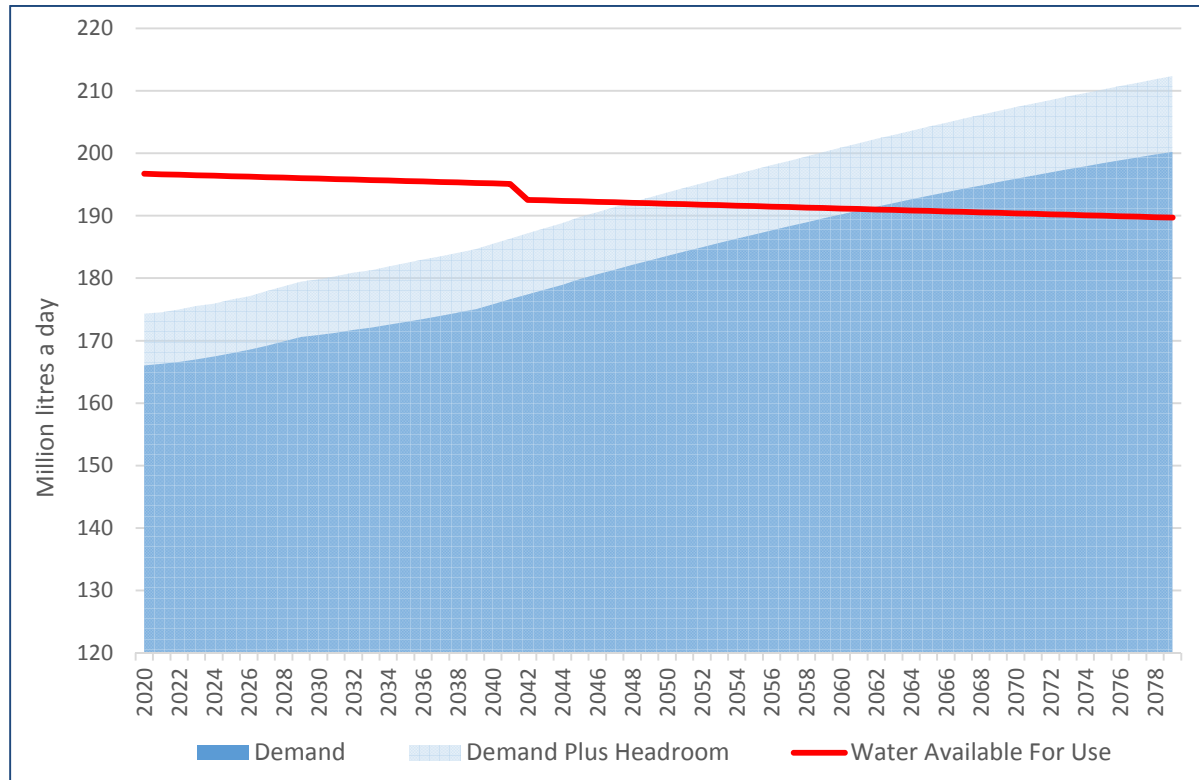
We consider the amount of water resources available (known as water available for use) and compare this to the forecast of demand over each year of the plan. We take into account the predicted impacts of climate change on these forecasts. This allows us to predict if we have a surplus or deficit of supplies at any time throughout the duration of the plan.

As demand can increase significantly in hot, dry spells, we also assess whether we will have sufficient water resources to meet the needs of our customers during these peak periods.

To account for uncertainties in our forecasts, we plan on the basis of meeting customer demand and add an additional amount – a safety buffer – known as headroom.

We found that the water available for use (with climate change impacts included) was slightly lower under the worst drought on historic record scenario in comparison to the 1 in 200-year drought forecast, and therefore this scenario was selected as the basis of the plan. Our analysis shows that whilst we expect to have a surplus of water resources until nearly 2050, at this point demand (plus headroom) is forecast to exceed available supplies. This is shown graphically below.

Our Baseline Supply-Demand Balance



We have estimated that without carrying out additional actions to reduce consumption or leakage, demand in a dry year will reach an average of around 210 million litres a day by 2080. At the same time, the amount of water available for use from current sources is expected to decrease slightly, due to climate change, to around 190 million litres a day. Taking headroom into account, by the end of the planning period we would have a forecast deficit of 23 million litres a day under these baseline conditions.

Deciding our future options

We have considered a wide range of options to address the deficit, including those which reduce leakage or consumption (known as demand-side options), those which increase supplies from new or existing sources (known as supply-side options) and those from third parties including transfers of water from neighbouring companies. These options were appraised by assessing both the costs and benefits of each, and then applying a modelling approach to give the optimal solution. In considering the options, we have been guided by customer preferences, government policy priorities and the priorities of local stakeholders. These can be summarised as:

- Enhancing the resilience of our operations to the most likely risks
- Further reducing leakage from our network
- Reducing household and non-household consumption and providing more information on usage so that customers have more control over their bills
- Protecting the environment from damage from our abstractions and preventing deterioration of the ecological status of rivers
- Using innovative techniques to develop solutions that improve the affordability or effectiveness of the options selected

We tested the robustness of the plan by considering different risk scenarios, including severe droughts, increased population growth and worst case climate change projections. We sought feedback on our draft plan through a public consultation and also asked customers' views on our Business Plan (which incorporates the early years of our water resources management plan) through an extensive range of communication channels. We have made a number of revisions to our plan in response to the feedback received, most noticeably in terms of strengthening our demand management strategy.

Our preferred plan

We have selected a plan that we believe provides the best value to our customers and yet demonstrates a strong sense of environmental stewardship. Although we do not have a projected deficit until nearly 2050, we consider that it is important to take action to reduce demand for water in the short-term. This increases our resilience to droughts and other events that may reduce the availability of supplies, benefits customers as it reduces the likelihood of supply restrictions (such as hosepipe bans) being required, and has a positive effect on local river and wetland habitats.

Our plan is focused on demand-side options, as detailed below:

- We plan to reduce leakage by 15% between 2020 and 2025, with further 15% reductions in each subsequent five year period up to 2045 (a total of 56% reduction in comparison to the 2020 level) - to be achieved through a combination of replacing our oldest, leakiest mains more quickly, helping to reduce the level of leakage from customers' pipes, increasing both the level and speed of leak detection and repair on our network, and managing pressures better to create a more stable network which is less likely to cause bursts and leaks.
- Increasing the proportion of household customers who are metered to 90% by 2025 and 95% by 2030 – to be achieved by expanding our enhanced optant programme with the option of introducing compulsory installations if needed to achieve these targets. Currently, around 56% of our customers have metered supplies and evidence from across the water industry indicates that households reduce their consumption by around 14.5% once metered.
- Introducing smart metering devices to at least 10% of customers by 2025. This will build on our current pilot scheme involving the installation of smart meters in 220 homes and will provide near real-time consumption data to customers, which is predicted to reduce consumption by at least a further 1.5% in comparison to conventional meters. Leaks on customers' pipes can also be detected more quickly. Beyond 2025, we expect that we will install smart meters as standard, providing the cost-benefit analysis shows it is effective to do so and we have the support of customers.
- Increase investment in water efficiency measures and research to reduce consumption by four litres per person per day by 2025. In combination with the metering programme, this will result in 134 litres per person per day being consumed by 2025 reducing down to 118 litres per person per day by 2050. We will align the ongoing roll-out of metering programmes with our home water efficiency check programme, with visits targeted to households with high consumption or who are most affected financially. We will also

consider the use of tariffs to incentivise more efficient use of water later in the planning period.

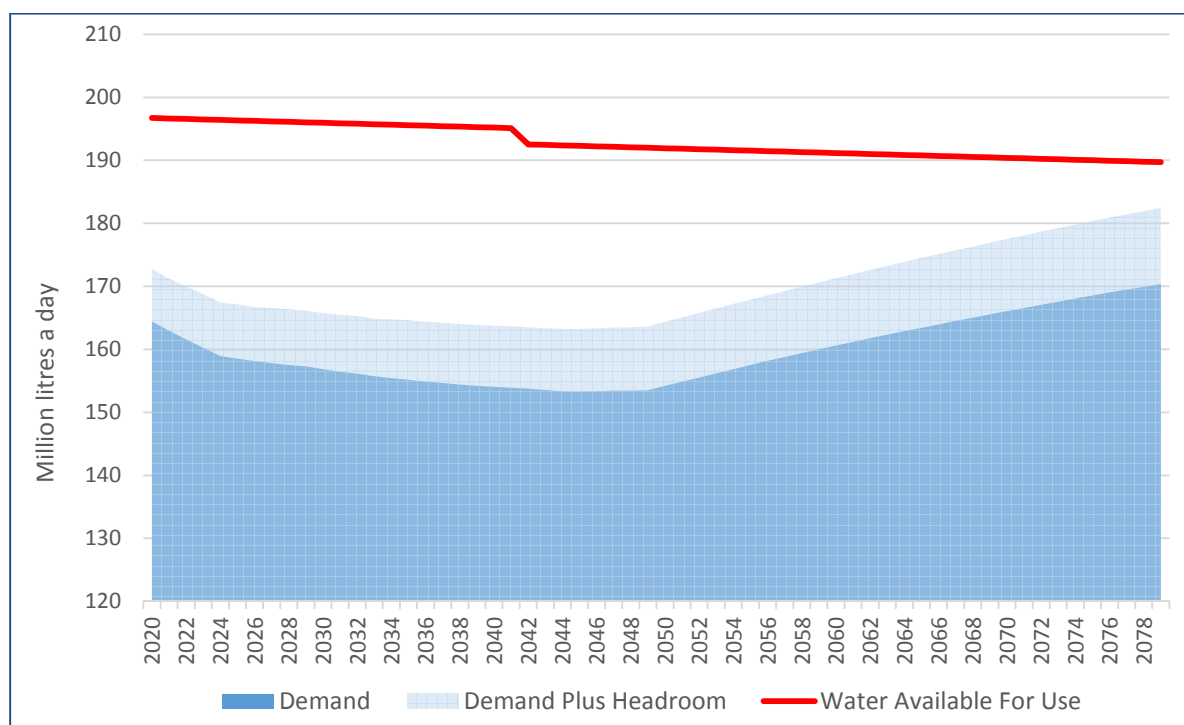
- Assessing the best approach to implementing a water efficiency programme for non-household customers under the new market conditions, by working in partnership with retailers, businesses and other non-household properties.

From a resilience perspective we do not forecast the need to be increasing the water available for use and therefore do not have any supply-side options in the plan. However, to ensure our plan is fully resilient to potential changes in our forecasts, we have committed to carrying out feasibility and environmental impact studies on new or existing boreholes in the River Mole and Medway catchments, and we have included these options in the Strategic Environment Assessment which we have published alongside the plan. The results will be used to help inform our future water resource management plans.

We have worked closely with the Water Resources in the South East (WRSE) group to look at solutions that best meet the needs of the region as a whole. Our plan includes a transfer to South East Water from 2042, as the regional model consistently selected this as a preferred option as part of the overall solution for the south east.

The supply-demand balance after implementing our preferred plan is shown below. This shows demand decreasing in the first part of the plan due to the effect of our leakage, metering and water efficiency activities, then increasing gradually over the remaining life of the plan due to predicted growth in population across our area of operation. The water available for use reduces over the first half of the plan due to the predicted impact of climate change as well as the transfer to South East Water.

Final Supply-Demand Balance



Conclusion

We believe we have created a best value solution to meet the needs of current and future customers, the wider region, and the environment. We plan to reduce demand significantly through an enhanced programme of metering, water efficiency and leakage reduction measures. We believe the plan meets our customers' priorities on affordability, innovation and resilience, and is aligned with the approach taken in our Business Plan for the 2020 to 2025 period.

We consider the plan to have sufficient flexibility to allow an adaptive approach, so that if demand rises we can bring forward additional options, whilst if demand is lower than forecast we can respond accordingly. We are also open to solutions from third parties to either reduce demand or increase supplies in a cost-effective, environmentally sustainable and resilient way.

In the proposals, we have set out our next steps so that we can monitor progress with the plan, and improve the information that will allow us to refine our future water resources management plans. On a regional level, we will continue to actively participate in the WRSE group so that we can collaborate on developing more sophisticated modelling techniques, investigate the capacity for further water transfers, and encourage third parties to participate, to create the best plan for south east England as a whole.