



Affinity Water Starts Smart Meter Rollout as Part of Ambitious Programme of Investment

After Affinity Water's liaison meeting with British Water, we caught up with Gerald Doocey, head of asset planning at Affinity Water, to find out about his organisation's plans.

By: Mark Coates, senior international director of infrastructure policy advancement at Bentley Systems and immediate past chair of British Water's U.K. Forum

Affinity Water is the largest water-only company in the United Kingdom, supplying 948 million litres a day to 3.8 million people. It owns and manages water assets and networks in an area of approximately 4,500 square kilometres, which is split over three regions in the South East of England. Its central region serves parts of Bedfordshire, Buckinghamshire, Essex, Greater London, Hertfordshire, and Surrey. The east region delivers water for Essex while the southeast region serves part of Kent.

Affinity Water has been supplying water to the local community for more than 170 years and covers three London airports. It currently has the highest individual demand for water in the U.K. at 157 litres per person per day, compared to the national average of 141 litres per person per day.

The firm faces the challenges of climate change and population growth, so to help overcome them, it has big plans to reduce water usage. It also has one of the most ambitious leakage reduction targets in the water industry. Affinity Water had the largest reduction in leakage of any water company in 2022-2023 at 15.8%, surpassing their target of 14%. The company states that they are well on track to meet their 20% reduction target for this asset management plan (AMP) period by 2025. In part, it is because Affinity Water is running one of the industry's biggest campaigns, Save Our Streams, which has more than 240,000 customers signed up to receive advice and devices for saving water. Also, last autumn, the firm produced a draft plan for providing a sustainable, efficient, and affordable supply of water for the next 50 years from 2025.

Affinity Water faces a shortfall of 449 million litres of water a day by 2050 but aims to manage this through its water resources management plan (WRMP). The company's WRMP was developed in alignment with the U.K.'s first regional plan for water resources. The plan includes further reductions in leakage and the demand for water, as well as investment in new infrastructure for new sources of water to ensure long-term, resilient supplies for customers, leaving more water in the environment to help globally rare chalk streams in Affinity Water's supply area.



New water resources include a scheme to transfer water normally flowing into the sea from the Midlands to Affinity Water's supply area by using existing infrastructure. The "Grand Union Canal Strategic Transfer," one of Affinity Water's most innovative strategic resource options, would also see the firm take treated water from Severn Trent's Minworth site through a new, closed 15.5-kilometre pipeline to the canal near Atherstone in Warwickshire. Water would be abstracted at a location near Leighton Buzzard and stored, first being treated at a new water treatment works on site and then transferred to its supply area.

Another part of the WRMP is a Thames-to-Affinity water transfer, which would see water transferred through a new pipeline from the River Thames. The water-only company is looking at two routes. A western route would be facilitated by shared use of existing lower Thames reservoirs, taking water from the Thames using either a raw-water transfer from an existing lower Thames reservoirs system or a direct river intake to a new water-treatment works. The eastern route would involve a new raw-water transfer from the river upstream of King George V reservoir, transferring the required water to the Lee community.



With these innovations, Affinity Water is looking to build on successes already achieved. In terms of water quality, it has maintained industry-leading performance in the compliance risk index (CRI) rankings in the industry, the metric used to measure water quality performance. Much of this success has been down to acceleration work with reservoirs maintenance and improvements in treatment processes, as well as the competency of its workforce.

In 2022-23, Affinity Water met all its water industry national environment programme (WINEP) obligations—requirements to improve the natural environment—and is on track to achieve the same by the end of AMP 7.

In AMP 8, which starts in two years, the firm wants to install smart meters for 377,000 households and 20,000 non-households. This advanced metering infrastructure (AMI) programme will transform how the water company operates. It is currently working on its technology requirements and a procurement strategy, allowing it to go out to tender towards the end of this year to deliver the smart meter programme. It will run a pathfinder trial and install 20,000 AMI meters through the regulator Ofwat's Accelerated Infrastructure Delivery Project next year.

To achieve its goals, Affinity Water is looking at increasing enhancement spending in AMP 8 by about 40%. It is currently in the process of selecting partners that can deliver the size and complexity of its plans for the period. It also wants to invest GBP 135 million in strategic regional water projects, GBP 110 million in maintenance and repair, and GBP 50 million on trunk and distribution main replacement. It expects its AMP 8 smart meter programme will cost around GBP 150 million. To reach its connect 2050 programme, it believes that trunk mains laying booster pumps and storage will require about GBP 90 million.

The firm also wants to be carbon neutral by 2030 and has built carbon accounting into the heart of its planning process, recently rolling out a new carbon calculator developed with Mott MacDonald. It used Copper Leaf (C55) Portfolio optimiser to develop their AMP 8 plans. It is also working on the world's first water neutrality development in collaboration with Ofwat and the charity Nesta. It has an innovation steering group that meets bi-monthly, looking at water poverty, remote leakage detection, and smart metering.

In its strategic direction statement, covering 2025 to 2050, Affinity Water has four core ambitions:

1. Leave the environment in a sustainable and measurably improved state;
2. Be prepared and resilient to shocks and stresses;
3. Deliver what customers need at an affordable price for all; and
4. Work with communities to create value for the local economy and society.

Affinity Water is now putting the building blocks in place to help it meet these ambitious goals.