

CASE STUDY

Improving wastewater network outcomes by deploying systems thinking approaches

THE CHALLENGE

United Utilities provides wastewater services across the geographically diverse north west of England to over **7.3 million** customers utilising **78,000 km** of sewers and **3,000** pumping stations. A growing population, aging network and climate change are creating additional challenges for this vast sewer network. The challenge United Utilities wants to overcome is to predict performance and become more proactive in managing this network to reduce the impact of failure on our customers and the environment.

THE SOLUTION

United Utilities harnessed a Dynamic Network Management (DNM) approach that leverages a cutting-edge technology stack to solve these challenges before they become problems. A key player in this stack is Aqua DNA, an intelligent digital solution that collects live data and improves wastewater network performance using smart sensors and AI-powered predictive analytics.

The system works in real-time and applies descriptive, diagnostic and predictive analytics to maintain system performance and, crucially, avoid household flooding, environmental spills, blockages and other pollution-causing events.

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“Working with Jacobs, we are the first in the world to be implementing this technology at this scale and with artificial intelligence being applied for full network system learning, we believe the work we’re doing is truly transformational and will deliver a step change in wastewater performance.”

“We’ve achieved a significant improvement in performance. We’ve already detected and resolved over 1,600 operational issues and we’re on track to roll out the remainder of the 20,000 sensors and enhance telemetry at over 3,000 sites by Autumn 2022”



Steve Mogford
Chief Executive

IMPACT ON UNITED UTILITIES

United Utilities has proactively identified and resolved over 1,600 operational issues in 2022, saving them time and money, reducing pollution, and protecting their employees from dirty and dangerous work.

This is thanks to state-of-the-art sensors, cloud-based software, and the revolutionary predictive AI of Aqua DNA. Now United Utilities can proactively solve up to 55% of all performance issues before they happen, and this ratio will get even better over time.



14%

reduction in external flooding



20%

reduction in internal sewer flooding



5%

reduction in sewer collapses



20%

reduction in pollution events



13%

reduction in blockages

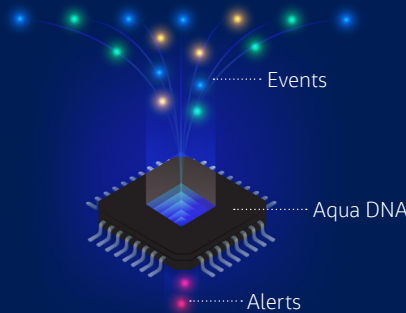
How Aqua DNA works.

Aqua DNA dynamic models predict behavior from your **existing systems and analytics**.

Our AI monitors your network to evaluate abnormal events and **prioritize alerts**.

Our platform directs your staff to the right issues and helps you **monitor the impact**.

- SCADA. Telemetry.
- CSO's. Sewer monitors. IFOC monitors.
- Pump stations. Detention tanks.
- Rain gauges. Tide and river levels.



Ready to boost your wastewater network's performance?

Email us for a live demo at: aquaDNA@jacobs.com

aquadna.jacobs.com