



Case Studies from WRC

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About WRC



WRC is an Independent Centre of Excellence for Innovation & Growth. We operate across different sectors including Water, Environment, Gas & Resource Management. Our clients include regulators, water & gas utility companies, governmental organisations, NGOs, trade organisations, industrial manufacturers & waste management companies. In August 2020 WRC was acquired by RSK Group, and continues to operate as an independent consultancy.



Building on a legacy in the international water & environment sector stretching back over 9 decades, combined with the knowledge of approximately 170 staff, we bring a shared purpose of discovering & delivering new & exciting solutions that enable our clients to meet the challenges of the future. We have an established reputation of being client-centred professionals, who work with our clients to develop & implement valued solutions. We are collaborative & take pride in delivering exceptional service.

Extensive laboratories, pilot plants & live network test facilities also allow us to practically support needs from assessing meter under-registration to evaluating new technologies prior to deployment. All of these services together allow to help our clients establish an effective data driven journey encompassing networks from source to tap.

WRC operates a Quality Management System certified to BS EN ISO 9001:2015, an Environmental Management System accredited to BS EN ISO 14001:2015, & a Health & Safety Management System accredited to BS OHSAS 18001:2007.

150
staff

9
decades

14M
GBP
turnover

Former UK
government
owned

10
nationalities

35%
female
staff

Case Study – Data driven asset management Insights

Delivered for: Water Utility, Italy

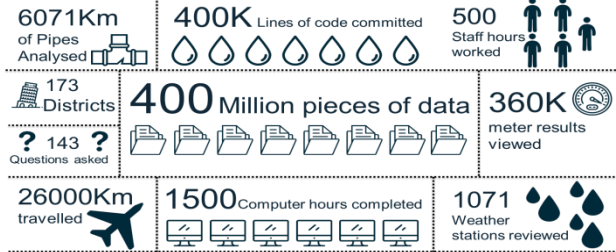
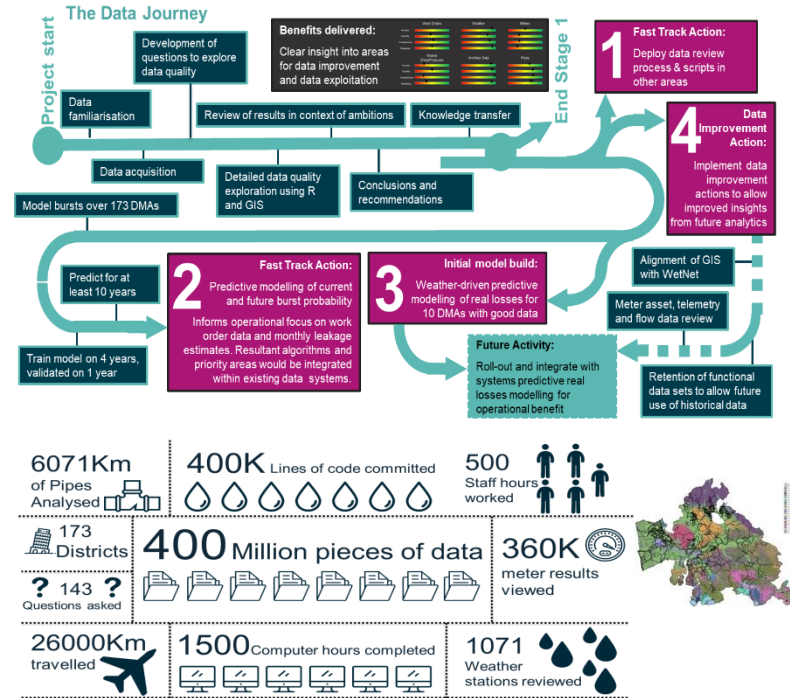
Delivered by: WRC Infrastructure Solutions Team

Following a period of significant investment in sensors and flow measurement technology, as well as preparation of a data lake, WRC were approached to provide support in identifying the value of this data to the business, and to support the journey of providing insights from this aggregated data.

The initial areas of focus for WRC’s work was to enable:

- a better understanding of the relative impact of weather on asset failure and leakage **to aid short-term planning of leakage resources and expected repairs;**
- identification of individual pipelines most susceptible to catastrophic failure within DMAs **to help plan cost-effective interventions** such as in-pipe inspection, leak detection;
- a better understanding of asset performance **for longer-term planning of pipeline rehabilitation.**

Throughout the delivery process knowledge transfer was key such that the client’s engineering team were upskilled and equipped to support future work involving the data and engineering concepts.



Case Study – Non Revenue Water Practices

Delivered for: Water Utility, Brazil

Delivered by: WRC Infrastructure Solutions Team

Our client had an ambition to be Brazil's most operationally efficient water company, and therefore a focus on non-revenue water was critical. The company had commenced a programme of sectorisation to allow detailed monitoring to aid NRW assessment.

WRC undertook a review of four important aspects: construction of the **water balance**, which compares the water supplied to a network with the consumed or otherwise used to **determine the real losses** (leakage); **customer metering**, which is essential in understanding the water actually consumed within the water balance and the income to the company; a **hydraulic model** of the main supply loop to the client's system; and **active leakage control techniques** and their deployment in a low pressure network.

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Work undertaken included:

- In-field review of ALC practices
- Review of water balance in line with best practice
- Estimation of meter uncertainties and recommendation on incorporation into leakage estimation process.

Key outcomes of the work included a recommendation to alter the flow measurement technology to a more expensive specification, but that which would provide improved sensitivity at low flows hence improving the water balance and increasing revenue. Improved physical validation of the Epanet model would allow it be used as a valuable tool in understanding operation of a complex network and hence reduce water losses.

Strategic technology trials on areas of the network at highest risk of real losses were also recommended, as reliance on acoustic methods were of limited effect given low operating pressures.



Headlines included:

- Low rainfall / resources
- High pressure network
- Irregular / illegal connections
- Re-analysis of water balance
- Identify areas for reduced uncertainty

Case Study – WRC in the Middle East

WRC in Dubai

Our partnership with Mantara Investment provides 24/7 local support for our clients throughout proposal & delivery stages, focused on collaborative knowledge sharing.



WRC, in partnership with Mantara Investment
A strategic partnership between:

- A long established scientific, engineering & environmental consultancy to the global utilities sector; and
- A trusted & respected local organisation providing a direct interface with our clients in the Middle East.

Together we provide a full range of services, centred around our passion for Knowledge Transfer, in water, wastewater, gas, renewable energy & energy efficiency.



نيوم NEOM



هيئة كهرباء ومياه الشارقة
Sharjah Electricity & Water Authority



شركة أبوظبي للنقل و التحكم
Abu Dhabi Transmission & Despatch Company



Case studies – Examples from WRC's Water & Environment Team

Review of indicator organisms & developing a framework for implementing a health-based target.

WRC provided bespoke consultancy to a water department in Asia for the development of a drinking water framework based on health-based targets. We considered possible approaches & proposed a series of recommendations & developments for the most viable approach.

Preliminary process design of a treatment plant in Abu Dhabi

WRC was commissioned by a local consultancy to carry out the preliminary process design for the enhancement of wastewater treatment plant in Abu Dhabi. It included sampling & dynamic modelling using STOAT. The models were calibrated & used to determine interventions needed to increase rates of influent treated.

Water Quality Monitoring Standards & Capacity Building

Long term partnership with a UAE water company to develop new water quality monitoring standards, integrated with a business-wide capacity building program.

Development of Standard Operating Procedures for Water & Wastewater Operations

Working in collaboration with a major Middle East client to understand their business need, then develop a full suite of design & operational procedures for implementation across their organisation and supply chain partners.

Technical Support Water Department

WRC have provided technical consultancy to an Asian water department related to water treatment processes, water reclamation & reuse, flow measurement & control technologies, water resources & groundwater modelling.

Development of a Water Quality Monitoring Programme

Our team of water quality scientists developed a monitoring programme for drinking water for a water department in Asia. WRC reviewed approaches taken by a number of jurisdictions & developed a strategy that was consistent with good international practice. Guidance was provided on the frequency & location of monitoring for around 30 chemical, microbiological & aesthetic parameters. The implementation of these provisions will enable the water department to reliably demonstrate the quality of their drinking water supplies.

Development of framework for deriving Drinking Water Quality Standards for a water department in Asia.

WRC developed a methodical framework based on our understanding of organoleptic properties & toxicological data of chemical parameters & used it to derive drinking water standards for use in a water constrained region.

Wastewater Technology Evaluation

Detailed evaluation of wastewater transfer technology suitable for use in the Middle East, comprising all factors including technical, economic, environmental, energy, and societal.

Our Business Leaders

We welcome your contact to discuss specific needs, share more case studies, and explore if we can help you to achieve your companies' goals.



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Corporate Responsibility and Sustainability

We are committed to ensuring our business is carried out in a safe, sustainable, responsible way.

Client services

In the work we undertake for our customers and through involvement in key strategic projects which benefit the environment and assists customers to fulfil both their own legal obligations and those of their clients.

Our People

Making WRC "The Place to Work". Investing in the wellbeing of our employees and providing opportunities for them to fulfil their own career aspirations.

Environmental Sustainability

Minimising our impact on the environment and running our business operations responsibly and effectively.

Community Engagement

Building relationships with, and providing support to the local, national and international communities in which we operate.

Values and Ethics

Being trustworthy, independent, and transparent. We have a zero-tolerance approach to modern slavery, child labour and human trafficking.



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