



Enabling water sector innovation

Connected decisions for a sustainable future

Wastewater Systems

Optimising storm overflow and wastewater investment for sustainable growth

The UK sector faces significant challenges in improving the performance of wastewater systems, including the need to reduce polluting storm overflow spills into waterbodies and flooding events affecting domestic properties and industrial activities. These challenges are exacerbated by stringent regulatory targets and growing public and environmental pressures.

To address these issues, the sector has committed approximately £12 billion to reducing storm overflow spills by 2030.

Alongside broader investments aimed at reducing pollution, improving river water quality, and enhancing biodiversity, the UK water sector is set to deliver its largest-ever DWMP investment programme, totalling £24 billion by 2030.

Investment to tackle the storm overflow challenge is expected to increase even further during AMP9

Digital Adaptive Systems Planning

Traditional investment planning and network modelling tools struggle to keep pace with the growing complexity of the sector. Decision-making within utilities is often fragmented, with different teams working in silos, making it difficult to develop a unified, system-wide approach to investment planning. Without an integrated, whole-systems and adaptive data-driven approach, utilities struggle to rapidly identify the optimal investment required to address challenges across catchments.

To address these challenges, BMA's next-gen AI decision software, Decisio™, provides a structured, whole-systems approach to wastewater systems planning, from data to investment optimisation. Unlike traditional hydraulic models, Decisio™ delivers a connected and simplified digital representation of wastewater assets, network and catchments, integrating asset, spatial, operational, cost, financial and engineering data. Through multi-stakeholder access via a cloud-based software, the platform enables a transparent and collaborative decision-making that is auditable and integrated across business units. This promotes a more coordinated approach to wastewater and drainage management planning.

“Without a whole systems and adaptive approach, water companies will struggle to adapt to an increasingly dynamic and uncertain decision landscape.”

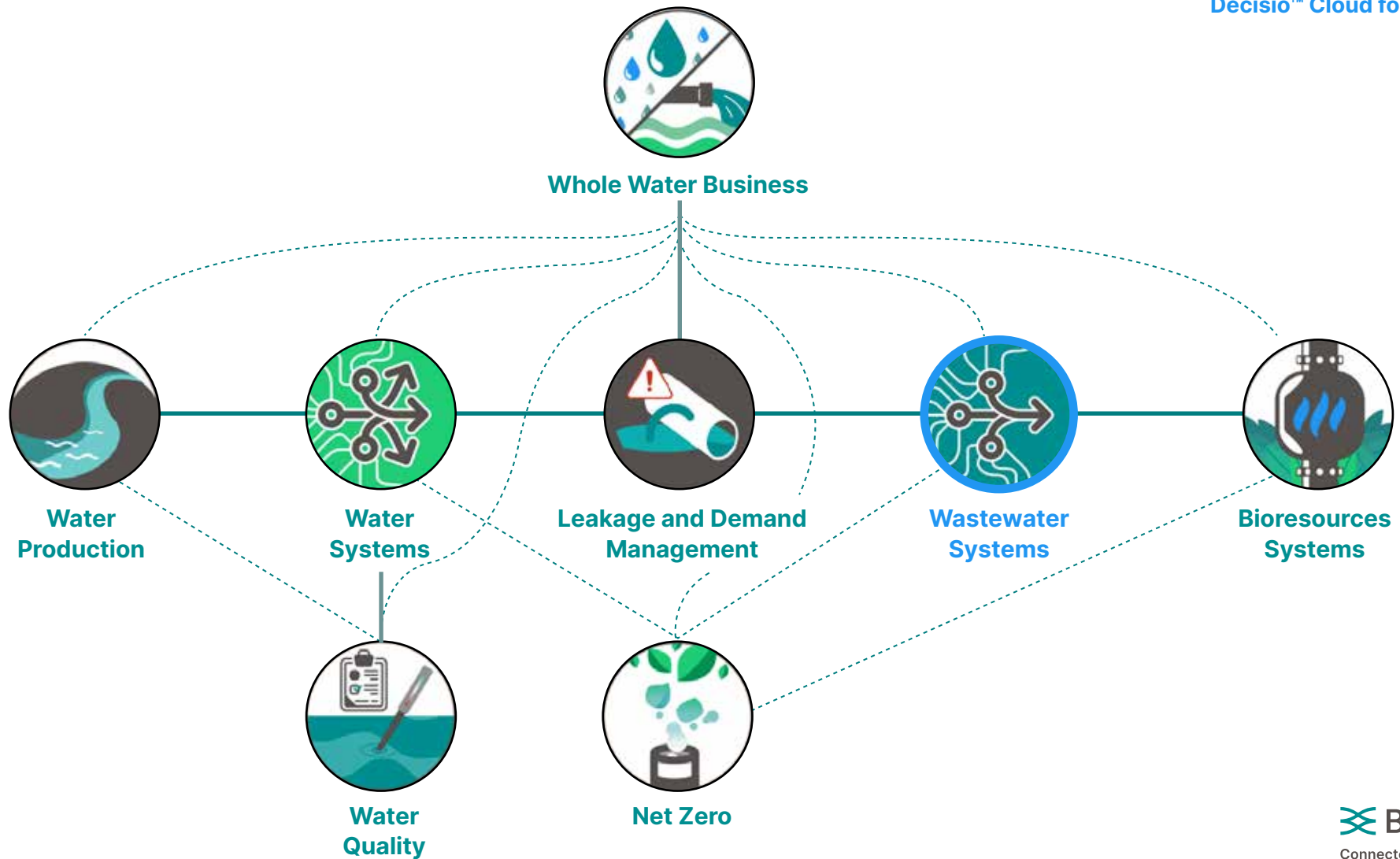


Digital Adaptive Systems Planning Platform

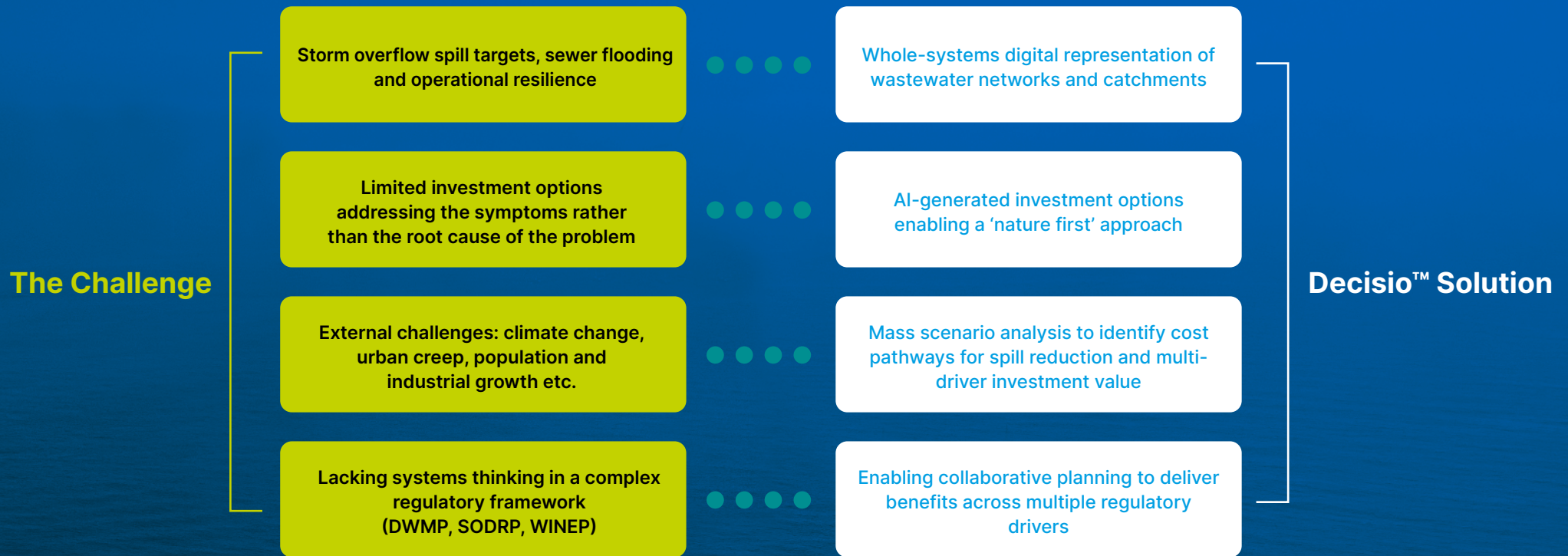
Eight Digital Business Twins capture the whole water business value chain



Decisio™ Cloud for Water

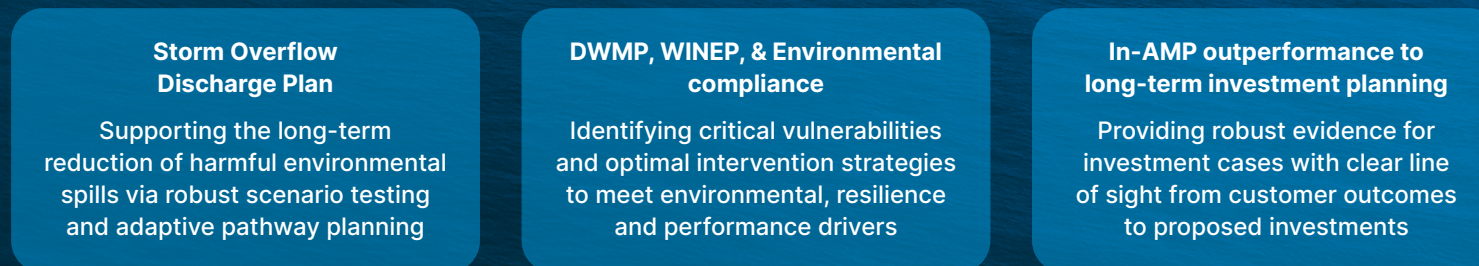


How Decisio™ Addresses Key Wastewater Sector Challenges



Regulatory Alignment

Decisio™ Wastewater Systems solution helps water companies align with critical regulatory planning frameworks through:



The Decisio™ Wastewater Digital Business Twin

A wide range of applications including

Storm Overflow
Spill Investment
Optimisation

Integrated Catchment
Risk and Opportunity
Analysis

DWMP
Data management and
programme optimisation

AI-Auto-generation of
SuDs and blue-green
solutions

An adaptive systems planning platform designed to automatically identify the optimal type, size, location and timing of investment

Key Benefits

TOTEX opportunities

Accelerates
identification of
investment options with
whole-systems benefits

Collaborative and agile
investment planning

Complements
traditional hydraulic
modelling

3 Step Process

1

Rapid System Mapping

Starts by rapidly creating data driven, comprehensive and connected Digital Business Twin of the integrated wastewater system

2

AI-Powered Optioneering

Leverages AI and advanced GIS analytics to identify optimal areas for intervention and auto-generate actionable blue-green and SuDs investment options

3

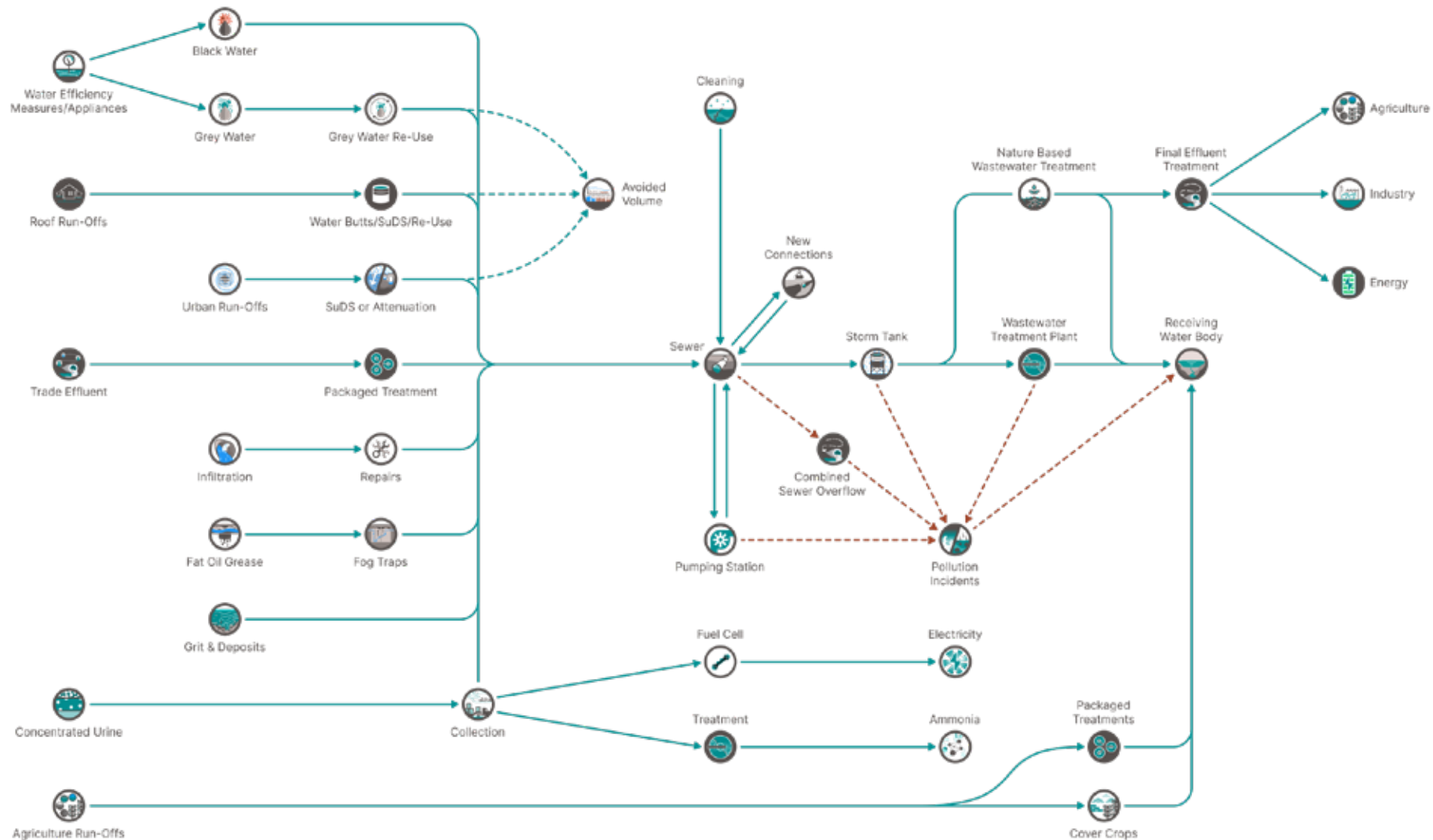
Adaptive Investment Planning

Supports the development and delivery of an optimal wastewater investment plan, balancing storage with more innovative blue-green infrastructure, in an adaptive and flexible way

All while reducing the complete reliance on traditional time and data intensive hydraulic models and initial engineering input

Value Chain: Decisio™ Wastewater Systems

This Digital Business Twin can be configured with your own data.
Get in touch to find out how.



Key Capabilities of Decisio™ Wastewater Systems

Whole Systems Digital Business Twin

- Digital representation of the wastewater systems value chain including assets, network and wider catchment.
- Data driven upstream-downstream connectivity and relationships.
- Holistic catchment-based data management, risk and opportunity assessment.
- Integrated modelling: Linking hydrological, hydraulic, asset performance, and catchment models to support holistic evaluation of complex infrastructure and natural system interactions.
- Business targets such as spill reduction targets

AI-Powered auto-generation of Investment options

- AI Auto-generation of sustainable urban drainage and blue-green investment options to enable a nature first approach.
- Prioritisation of catchment level interventions based on systemic understanding of risk and opportunity
- Manage a wide range of investment options from storage to more innovative solutions .
- Integrated catchment options management and multi-criteria options appraisal to enable holistic optioneering of your end-to-end drainage water management plan.

Adaptive Planning & Mass Scenario Analysis

- Scenario planning and adaptive pathways to prepare for uncertainty in climate, growth, and regulatory changes, enabling flexible, phased investment timetables.
- Whole systems TOTEX optimisation and consideration of other soft system targets (service levels)
- Plan and optimise your critical storm overflow spill reduction investment and DWMP over a multi-year or -decade horizon based on a range of strategic investment scenarios and drivers:
 - Spill reduction target
 - Sewer flooding
 - Other

Multi-stakeholder Collaborative Planning

- Enables stakeholder engagement and co-creation to improving acceptability and efficacy of interventions.
- Democratised geospatial visualisation of catchments, network connectivity and investments for clear communication of outputs
- Interactive dashboard to visualise investment pathways in line with regulatory requirements
- Align investments with 3rd parties to maximise synergies: delivering maximum benefits at minimum cost.

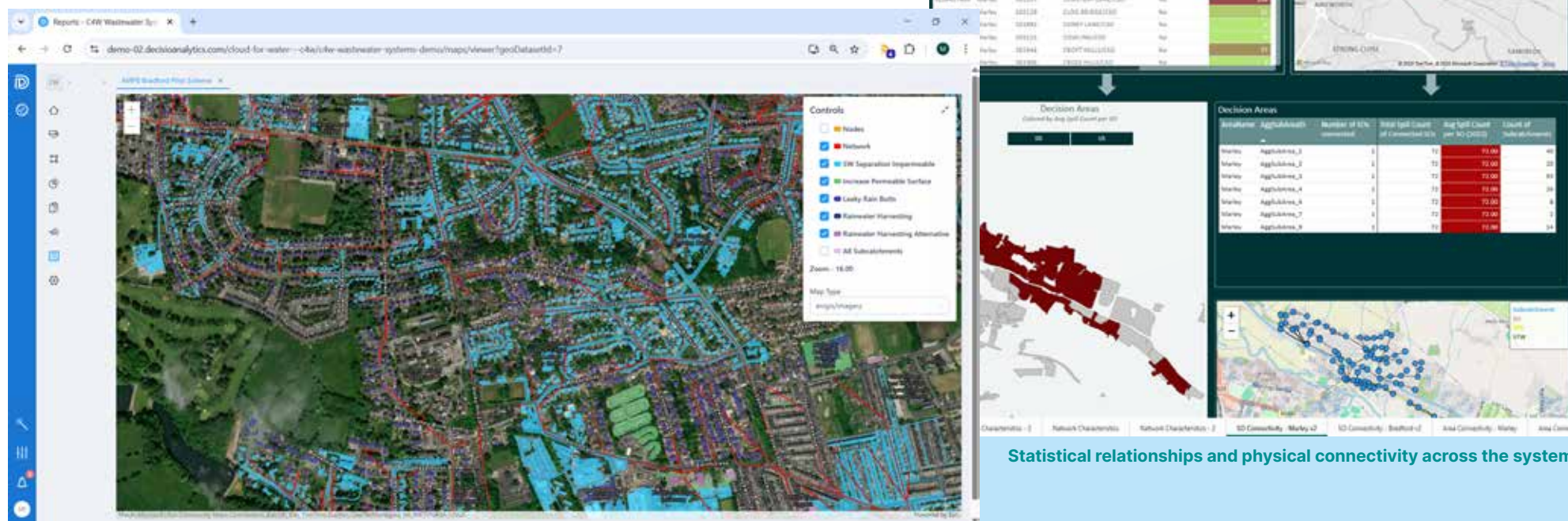
At its core, the Decisio™ Wastewater Systems Digital Business Twin provides a digital representation of the system, capturing network assets, their connectivity, and relationships.

This complements traditional hydraulic and operative predictive modelling with a planning capability that uses AI to rapidly identify catchment opportunities and access system-level investments to guide how the catchments and networks should evolve over time.

Enhancing both planning and capital delivery at catchment scale

We are applying a whole-systems approach to optimise water company storm overflow investment programmes.

Building on this foundation, we are now evolving this approach into a solution that auto-generates investment options for broader **integrated catchment risk-opportunity analysis and DWMP development**.



Statistical relationships and physical connectivity across the system

AI auto-generation of SuDS investment options

Working with:



BMA's mission is to redefine how utilities approach their most critical decisions, advancing whole-systems and adaptive planning to ensure investments strike the right balance between environmental and public needs, sustainability, Net Zero goals, regulatory compliance, and financial resilience.



Contact Us

To find out how you can take your water systems planning to the next level, please contact:

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