



INTEGRATED WATER MANAGEMENT SOLUTIONS

Enterprises University of Pretoria's Integrated Water Management solution focuses on the entire water distribution network and value chain; from source to tap. Our work is primarily multidisciplinary, and our research teams and advisory experts include members from among other the Engineering, Natural, Agricultural and Health Sciences disciplines.

A business solutions partner of choice




Our solutions bring about safe drinking water, include innovative ways to monitor and prevent water loss, provide insights into water treatment technologies and even include other innovative solutions such as green energy generation via conduit hydropower.

NICHE WATER SOLUTIONS IN AREAS SUCH AS:

- Water sourcing**
- Water processing**
- Water distribution**
- Regulatory, Policy and Specialised services across the value chain**

Water and environmental engineering contribute toward solving the existing and emerging water and energy problems in Sub-Saharan Africa. Being a semi-arid region, we need to find ways to better manage our limited water and energy resources.

THE FOLLOWING ARE SOME OF THE SOLUTIONS WE OFFER TO SUPPORT MORE INSIGHTFUL MANAGEMENT OF WATER AND ENERGY RESOURCES:

-  **Hydrogeology:** Provide technical insights into the distribution and movement of water over or through the earth's surface.
-  **Hydropower:** Feasibility studies for pumped water storage or conduit hydropower to enable green energy alternatives.
-  **Infrastructure modelling:** Cost-effective modelling for fit-for-purpose water catchment infrastructure planning.

People need safe and available water to survive and thrive. Innovative methods to improve sanitation, stop the spread of disease, and remove unwanted contaminants from water all form part of our research teams' daily efforts to build the conditions for access to safe drinking water that is a basic South Africa human right.

WE PROVIDE THE FOLLOWING SOLUTIONS TO HELP WITH EFFECTIVE WATER PROCESSING:

Wastewater treatment: Providing technical knowledge on waste minimisation and treatment, processes for separating suspended particles from the water, and biological removal of toxic metals. Wastewater treatment and beneficiation using biological, chemical, catalytic, membrane-based technology, plasma-based technology, and other energy-efficient methods.

POTABLE WATER ASSURANCE:

Conducting X-ray fluorescence (XRF), X-ray diffraction (XRD), or inductively coupled plasma - optical emission spectrometry (ICP-OES) laboratory techniques to carry out laboratory analysis to identify the various particles contained in water samples as well as the quality of the materials used for water treatment.



PERSISTENT ORGANIC POLLUTANTS:

Providing medical knowledge to recognise, manage, and comprehend environmental chemical pollutants and their effects on the health of the environment, people, and animals.

INFRASTRUCTURE CONDITION MONITORING:

Infrastructure and assets need to be monitored and optimized for total asset life cycle and associated performance and safety issues – from design to decommissioning (Want to learn more? See our Centre for Asset Integrity Management).

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WHY PARTNER WITH US?

Customised, innovative and real-world relevant research and advisory services driven by scientific evidence.

Access to comprehensive knowledge resources from the University of Pretoria.

Personalised services to achieve unique business and professional development goals.

Innovative solutions for targeted training and businesses decisions support insights.

An extensive international footprint spanning six continents.

Leading domestic and international industry experts and thought leaders.

**FOR MORE INFORMATION,
CONTACT US TODAY.**



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WATER DISTRIBUTION

In order to meet societal needs, large amounts of water are constantly transported from sources to aggregation points and then further distributed to intermediate or final uses. Numerous water authorities struggle with the issue of water loss in distribution networks and its becomes challenging to pinpoint the problem's origin and allocate the necessary resources to arrest losses and correct damage.

For effective water loss mitigation, we provide a novel water leak detection solution. In order to enable effective water distribution, Enterprises UP deploys a novel methodology for precisely detecting water leaks in a reticulation system in real time. In addition to conducting routine network leak detection surveillance, we offer technical guidance to seamlessly integrate the technologies into the planning and design phase of any water network expansion, upgrade, or maintenance project.

REGULATORY, POLICY AND SPECIALISED SERVICES ACROSS THE VALUE CHAIN

The value society places on a thing is reflected in how much effort is made to protect, grow and nurture that thing.

The South African National Water Act provides for a number of measures to give effect to the state's custodianship of the water resource. These include the "Reserve", referring to the quantity and quality of water required to satisfy basic human needs and to protect aquatic ecosystems in order to secure ecologically sustainable development and use of the relevant water resource. The resource classification system determines the class and resource quality objectives for significant water resources and these ultimately result in resource water quality objectives involving a catchment visioning process. In a VUCA world, we need even more Risk-based guidelines for the prudential management of our aquatic ecosystems.

Water policy, regulation and standards: Assist those involved in the water value chain in developing policies, regulations and standards that can consistently guide stakeholders in the water value chain and promote ethical behaviour and discourage wasteful or sub-optimal practices.

Geotechnical centrifuge modelling: Conduct controlled tests to assess the stability, stiffness, and capacity of the sand and rocks of critical infrastructure such as foundations for bridges, buildings, embankments, slopes and their stability.



Enterprises UP has developed an integrated water management solution to demonstrate our commitment to long-term water resource management throughout the value chain. We have previously provided research solutions to both public and private sector organizations, assisting them to reduce water loss, improve sanitation, find ways to produce renewable energy, use computer science to model future infrastructure, and actively monitor the dependability of existing infrastructure.

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