# Call for Innovation – Spring Accelerator 3

## Overview

The Spring Accelerator aims to identify innovative solutions that help address a significant need in the UK and Ireland water sector. Our current programme, Spring Accelerator 3, is looking for innovations to answer the question: "How can we integrate enhanced catchment monitoring capabilities to inform proactive decision-making and better protect source water health and the environment?"

The Spring Accelerator's purpose is to bring the right people together to drive the development and adoption of solutions. Spring is here to facilitate collaboration and mobilisation; we bring successful entrants and water companies together and act as a knowledge transfer partner for projects to ensure learnings are shared across the sector.

## The Context

A water catchment is a water body (for example, rivers, reservoirs, seas, and groundwaters) and the area of land that surrounds it. Human activity in a catchment can impact the water within in multiple ways, including but not limited to runoff from land use, abstraction from water bodies, and returning water to the environment. Safeguarding these water bodies is a crucial part of our efforts to protect the natural environment and is essential for our health, well-being and economic prosperity.

There are many different uses of water within catchments and, as such, many stakeholders operate in this space. As one of these stakeholders, water utilities are keen to continue investing in catchments and take action to improve the environment for all water users. Every day in England and Wales alone, more than 55 billion litres of fresh water is abstracted from the environment by water utilities for use domestically and by industries such as the energy sector, agriculture and fish farming. The water utilities then treat the 'used' water and return it to the environment.

To understand the water utility impact on the environment when abstracting and discharging water, environmental water samples are taken, often in the form of grab samples. Grab samples are small samples of water collected from select locations at one point in time (e.g. once a day). The samples are analysed, and the data is extrapolated to determine the larger water body's quality and to ensure compliance with legislation.

Legislation plays a significant role in water utilities' interaction with catchments. For instance, water companies in England are regulated by Drinking Water Inspectorate, the Environment Agency, and Ofwat, with laws including the Water Resources Act, Water Industries Act, Water Act, and the Environment Act. A further example is that in Scotland the Drinking Water Quality Regulator, the Scottish Environment Protection Agency and The Water Industry Commission for Scotland regulate legislation including The Sewerage (Scotland) Act, the Water (Scotland) Act and the Water Environment and Water Services (Scotland) Act. As part of this legislation, water companies are required to mitigate pollution and negative impacts on the water environment or face substantial financial penalties. Water utilities are working to go beyond legislative requirements in their efforts to enhance the quality of the drinking water they

extract, and to guarantee the quality of the water they return - both for the benefit of the catchment today and to maintain resilience in the future.

Population pressures and climate change will likely lead to changes in the catchment, including shifts in land use, increased drinking and wastewater demands, poorer surface water quality, reduction in available source waters and increasing natural hazards, such as flooding. In the face of these emergent challenges, innovation in catchment management needs to be developed, tested and implemented today, so that water utilities can continue to deliver the excellent quality and quantity of water we currently enjoy across the UK and Ireland.

## The Challenge

**How can we integrate enhanced catchment monitoring capabilities to inform proactive decision-making and better protect source water health and the environment?**

Spring invites innovators to provide solutions to help us better understand, monitor and take action about the challenges and opportunities in raw water sources and their surrounding land to help protect source water health and the environment.

Some of the problems within this space include:

- There are few realistic and reliable tools that map and model a whole catchment to enable the understanding of a catchment as a whole system.
- There can be issues with data sharing: multiple sources of information are often within systems that are incapable of communicating with one another.
- There is a lack of data-driven decision-making. Water utilities would like the ability to use data to forecast how a catchment will behave in future and notify them of likely events so they can respond proactively to such events.

Spring Accelerator 3 aims to identify and support solutions that bridge these gaps in enhanced catchment monitoring. Data collection is an element of this, but delivering the capability to make sense of and use this data is equally vital. The aim of this Accelerator is to provide integrated insights and forecasting abilities, augmenting the capabilities of water utility decision-makers in areas such as:

- Abstraction practices. A better understanding of the catchment could lead to utilities only abstracting water from a catchment when it is of a certain quality. If source water quality entering a water treatment works were consistently higher, water utilities would save time, money and resources on water treatment works operation and maintenance.
- Legislative compliance. Water utilities are one of many stakeholders in a catchment, and accurate attribution of compliance breaches (for example, to highways or agriculture) could help utilities avoid penalties and take action to stop these breaches at source.

As such, successful solutions for Spring Accelerator 3 will not only help safeguard the environment but help water companies operate more efficiently, saving them time, money, resources and reducing regulatory breaches.

## What we are looking for

Multiple solutions exist in the water sector for monitoring catchment water quality. These include solutions with a combination of factors, including high sample frequency, cheap monitoring, real-time monitoring, easy maintenance/installation and reliable solutions. However, due to the difficulties of operating in the catchment (changeable weather, unmanned environments, vandalism, power sourcing, restricted access and limited signal) and their expense, adoption has been slow. Grab samples are often used instead of enhanced catchment monitoring methods because, while they take more staff time and are less representative of the wider water body, they are cheaper and face fewer of the above logistical challenges.

However, as enhanced solutions improve and are adopted, it is important that they are not standalone, one-dimensional technologies. A series of integrated data sets that can form a richer picture of the wider catchment would be beneficial for understanding this complex and multifaceted environment.

As such, of particular interest to Spring Accelerator 3 are solutions which go beyond enhanced catchment monitoring and support the integration of catchment data. This includes solutions where multiple data sets communicate, that can model and map catchments (including identifying stakeholders within a catchment), that can forecast how a catchment will behave in future and notify water companies of likely events.

## Benefits to Innovators

The Spring Accelerator focuses on bringing the right people together to drive forward the adoption of solutions. Successful innovators can expect to have their ideas seen and heard from the people in the UK and Ireland Water Industry who want and need solutions and are guaranteed feedback on their solutions from these experts, the further you get in the process, the more detailed feedback you receive.

The Accelerator does not offer a direct financial reward. The goal of the challenge process is to facilitate collaboration in the sector, resulting in your solution being mobilised with one or more water companies. Spring is here to facilitate this collaboration and mobilisation. We will bring the entrant and water companies together. Delivering the project is at the discretion of the water companies involved.

Spring will also act as a knowledge transfer partner for projects that are mobilised to ensure learnings are shared across the sector.

## Deployment Timescale

- Launch of the Competition: 27/02/24
- Deadline for applications: 09/04/24
- Selection and notification of finalists: w/c 13/05/24
- Date of Innovation Exchange Pitch Day: w/c 27/05/24 (tbc)

## Eligibility Criteria

- The Accelerator is open to all innovators who have an idea or solution that addresses the challenge statement.
- Applicants may be individuals, businesses or a partnership between the two.
- You can submit more than one entry to the Challenge.
- Innovators can be UK-based or international.
- Priority will be given for solutions not previously trialled in the UK and Ireland.

Further information can be found in SA3 Terms and Conditions.

## Application form

You can apply for Spring Accelerator 3 here.

In-progress applications will not be saved. We recommend writing your answers in a word document and copying them over when you are ready to submit. Questions and character limits can be found in our Innovator Guidelines document.

## Assessment Criteria

Submissions for the Accelerator will be pre-screened by Spring's team of industry experts. This initial filter focuses primarily on the quality of the application, not of the proposed solution.

Applications will be pre-screened on:

- How relevant is the submission to the challenge?
- How new is the proposed solution?
- How well is the application completed?

Following the Spring internal review, successful submissions will then be reviewed by subject matter experts (SME's) at the participating water companies for that challenge.

Successful applications will be assessed on:

- How credible is the solution?
- How well does the solution fit the problem?
- How innovative is it?
- Cost-benefit
- Deployment timescales

In the spirit of supporting innovators and providing a transparent and valuable challenge process we have provided the scoring criteria that will be used to assess submissions. See Innovator Guidelines Section 3.2 for further information.

## IP & Potential Commercial Route

If your idea, product or solution is successful all intellectual property rights will be discussed on a case-by-case basis with the water companies mobilising a continued project. Spring's intellectual property rights position is to allow the idea submitter to retain all intellectual property over their idea, product or solution. More information can be found in SA3 Terms and Conditions.

## Background: Spring and the Accelerator

Spring Innovation was founded in 2021 as the Centre of Excellence for UK and Ireland's water sector, dedicated to accelerating industry transformation through innovation and collaboration. We are the custodian of the Water Innovation Strategy 2050, a document that outlines key themes, opportunities, and drivers for innovation across the water sector and the huge gains that can be made by approaching these collaboratively. This document drives all of Spring's work and our mission to connect, integrate and enhance innovation excellence within and outside the water sector. You can find the Water Innovation Strategy here.

The Spring Accelerator calls out for specific implementable innovation for water companies to trial, progress and adopt as a collaborative group - facilitating collaborative working and breaking down barriers. Our current programme, Spring Accelerator 3, sits inside Water Innovation Strategy 2050 Theme 3: Protecting and Enhancing Natural Systems.

Our challenge statement has been designed in collaboration with the sector. Water utilities have been instrumental in selecting and refining our challenge area. We then hosted an Ambition Surgery, our problem definition and challenge setting mechanism, and brought together utilities, suppliers, academia and the Environment Agency to help us articulate the specific set of issues our challenge should focus on. This was then validated and further developed with a cross-sector group of catchment advisors. Thank you to everyone who helped develop this challenge.