



Innovating our canal network

Our prospectus
2026



Foreword

**Together, we can shape what canals become next.
Unlocking bold new opportunities for people, places,
nature and communities across England and Wales.**

One of the things that continually strikes me about our canal network is its ability to evolve and remain relevant to society today.

Whenever I walk along a towpath, go through a lock, visit a construction project or see a community enjoying their local canal, I'm reminded that waterways have never stood still. Built more than 250 years ago to move goods, they have continually adapted to meet the needs of each generation.

Today, we're at another important moment in that journey. The challenges facing our canals are significant: climate change, ageing infrastructure, growing demands on water, nature recovery and a need for accessible public spaces.

But alongside those challenges are opportunities. Opportunities to create healthier communities, support nature recovery, improve water security and unlock new value from one of the nation's most remarkable assets.

Innovation will be central to that future. Not innovation for its own sake, but innovation that solves real problems, creates lasting impact and helps us get more from our waterways for people, places and nature.

We know we cannot do this alone. The best ideas often come from collaboration, bringing together different perspectives, expertise and experience.

This prospectus is an invitation to be part of that future. It outlines the areas where we see the greatest opportunities to work together and where innovation can help shape the next chapter of our canal story.

I hope you'll join us.



Campbell Robb
CEO Canal & River Trust

Introduction

Across England and Wales, the Canal & River Trust (the Trust) cares for more than 2,000 miles of canals and connecting rivers, almost 100 reservoirs and docks, and over 10,000 principal assets.

Together, they form one of the nation's most extensive blue-green networks, connecting communities, supporting wildlife, underpinning local economies and delivering vital water management functions.

They are living infrastructure with the power to help tackle some of society's most pressing challenges.

From climate resilience, nature recovery and water security, to healthier communities, sustainable growth and thriving places, canals have the potential to deliver significantly more value for people, communities and the environment.

Innovation has always been part of the canal story.

The canal network itself was one of the great engineering innovations of its time, transforming industry, trade and communities across the country, and forming a backbone to the industrial revolution.

Over the centuries, canals have continually adapted to society's changing needs, evolving from industrial transport routes to places that support leisure, heritage, wellbeing and nature, as well as businesses.

Today, we face another period of transformation.

At this time, the network faces increasing pressure. Climate change is driving more extreme weather. Infrastructure is ageing. Demands on water and public spaces are evolving. Expectations are rising, while resources remain constrained.

Meeting these challenges and realising these opportunities will require new thinking, new technologies and new partnerships.

Innovation is how we respond.

It enables us to maintain and operate the network more effectively today, while exploring how canals can play an even greater role in the future.

We cannot achieve this alone

Together, we can ensure our canals continue to evolve, delivering benefits for people, places and nature for generations to come.



This prospectus is an invitation to innovators, businesses, researchers, universities, utilities, investors, funders and public sector partners who share our ambition.

It sets out the opportunities we believe are worth exploring, the challenges we are seeking to solve, and the areas where collaboration can create the greatest impact.

Innovation purpose

The Canal & River Trust believes innovation is essential to securing a sustainable and inclusive future for our waterways, heritage, environment, and communities.

We will deliver innovation through partnership working, evidence-based decision making, collaborative problem-solving and rapid deployment. Our innovation activity will create measurable value, encourage learning and will safeguard the people, places, and assets entrusted to our care now and in the future.

Our approach to innovation

Innovation gives us a framework for bringing together expertise, ideas and evidence from across sectors to create practical solutions with lasting value.

Mission led

Innovation will solve challenges that help the Trust to achieve its strategy and drive cost efficiency

User focused

Innovative solutions will have the user central to their development

Evidence based

Decisions, priorities and outcomes will be assessed according to the data and facts

Sustainable & responsible

Solutions will contribute to environmental, heritage, navigation and community improvements

Safe & secure

Solutions will be safe for our people and members of the public and all data will be secure and protected

Inclusive

Our processes and solutions improve accessibility, equity, and inclusion for colleagues, volunteers, partners, and communities



Our innovation opportunities

Our innovation opportunities reflect both the challenges we must address today and the benefits we believe canals can help unlock in the future.

Together, they support our four strategic themes:



**Resilience
& Security**



**Health &
Wellbeing**



**Place &
Prosperity**



**Nature &
Biodiversity**

Opportunity 1

Reliable and
resilient assets

Opportunity 2

Efficient
construction

Opportunity 3

Canals as part of an
interconnected system

Opportunity 4

Health, wellbeing and
safety of our people

Opportunity 5

Health, wellbeing and
safety of the public

Opportunity 6

Better boating

Opportunity 7

Growing the Trust and
its local economies

Opportunity 8

Decarbonisation and
climate change

Opportunity 9

Protect and enhance
biodiversity



Resilience & Security:

Critical & interconnected part of the nation's infrastructure

The majority of our work is to protect and strengthen our canals, connecting rivers, reservoirs, docks, water, environment and heritage – an essential and interconnected part of the nation's infrastructure. Building long-term resilience ensures we continue to provide great experiences for customers, communities and nature.

Opportunity 1: Reliable and resilient assets

We operate 10,000 principal assets from aqueducts to reservoirs, culverts, bridges and tunnels to locks, pumping stations and embankments. Improved insights will enable us to better understand the interventions required to keep our network open, accessible and navigable.

We are seeking solutions to enhance and improve our knowledge of asset risk through more innovative inspection, monitoring and automation techniques.

Opportunity 2: Efficient construction

We invest around £80m annually to maintain our 250-year-old waterways infrastructure. We are particularly interested in innovations that reduce disruption, improve construction efficiency, and enable repairs to be carried out while canals remain operational.

We are interested in discovering new materials and techniques that enable us to undertake repairs in water for lock gates, leakage, tunnels and culverts.

Opportunity 3: Canals as part of an interconnected system

Canals are part of a wider, interconnected infrastructure system. Beyond navigation, they already play an important role in water supply and have significant potential to support future water management, flood resilience, renewable energy, heating and cooling networks, and climate adaptation.

We already supply hundreds of megalitres of water daily to water companies, agriculture and industry, and are working with Affinity Water and Severn Trent Water on the Grand Union Canal Transfer Scheme.



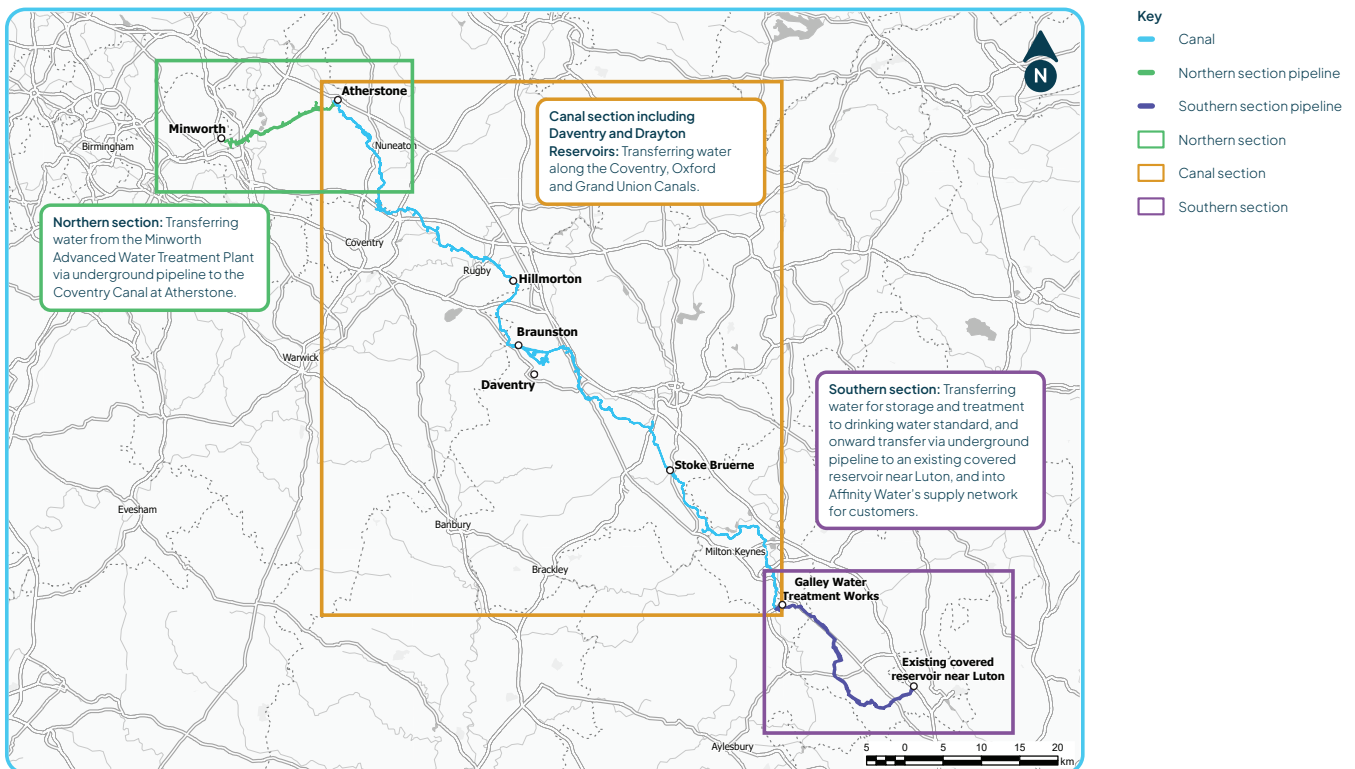
We are seeking partners to help explore how canals can play a greater role in connected water, energy and infrastructure systems, creating value for communities, the economy and the environment.

CASE STUDY: Grand Union Canal Transfer project

The Grand Union Canal Transfer (GUCT) project is a partnership between the Trust, Severn Trent and Affinity Water, and is one of a number of Strategic Resource Options being developed to ensure a continuing supply of clean drinking water for water company customers well into the late 21st century.

The GUCT will see treated, recycled water transferred from the West Midlands via a pipeline to Atherstone, where it will be discharged into the Trust's Coventry Canal, before running south via the Trust's Oxford and Grand Union Canals, then abstracted from the Grand Union Canal near Bletchley. It will then be treated to drinking water standards and provided to Affinity Water's customers, and to enable growth within the South-East.

Grand Union Canal Transfer scheme route overview,
(for more information see <https://guctransfer.co.uk>):





Health & Wellbeing:

Connecting people with blue spaces, routes & nature

Creating safer waterways and stronger connections between people and blue-green spaces. We continually strive to improve safety, wellbeing and accessibility for both colleagues and the millions of people who use and enjoy our waterways each year.

Opportunity 4: Health, wellbeing and safety of our people

The Trust undertakes a wide range of activities to keep the canal network open, thriving, and navigable. In line with industry best practice, we are committed to identifying, managing, and controlling health and safety risks associated with our activities and reducing them as far as reasonably practicable.

Our workforce encounters a variety of operational risks in their day-to-day activities, and key areas for innovation include reviewing and potentially adopting new methods of controlling risks associated with hazards such as working at height, confined space operations, and working on or near water.

We are seeking innovative approaches to managing threatening and aggressive behaviour and enhancing safe systems of work to improve workforce safety, wellbeing, and operational effectiveness.

Opportunity 5: Health, wellbeing and safety of the public

The Trust has a unique portfolio of assets that are freely accessible to the nine million people who live within 10 to 15 minutes of a canal.

Our waterways provide valuable opportunities to improve health and wellbeing through access to nature, recreation, and physical activity, and we welcome innovative solutions that enhance these benefits while strengthening our duty of care to members of the public.

We are particularly interested in approaches that improve public safety by raising awareness of risks such as drowning, slips, trips and falls, enhancing communication and engagement with visitors, and helping to ensure our canals and associated assets remain safe, accessible, and welcoming places for everyone.

We are seeking new approaches to creating greater wellbeing opportunities, and how we communicate risk awareness and the prevention of incidents such as drowning and slips, trips and falls.

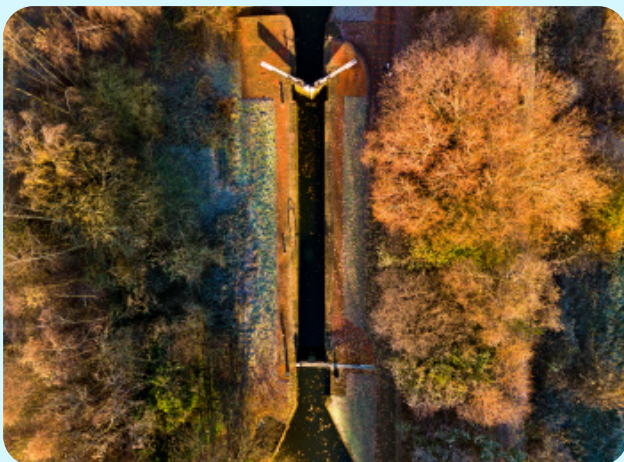
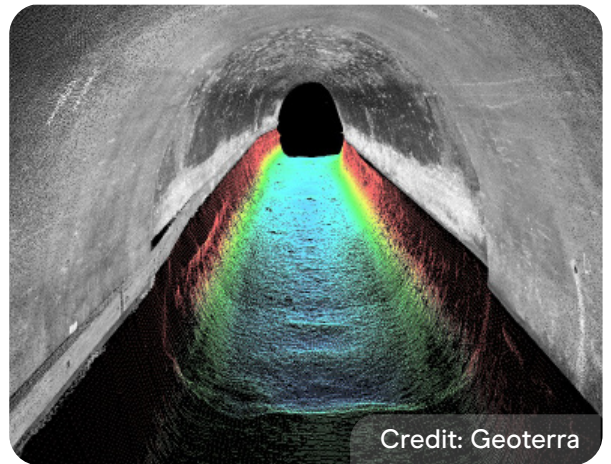
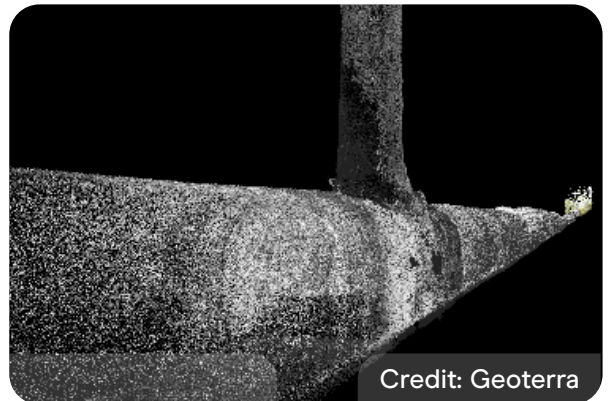


CASE STUDY: Drones

Over the last three years, we have introduced the use of drones for asset and building inspections into the Trust. This new process and capability support the inspection of asset such as bridges, aqueducts, weirs and embankments, providing more robust data and removing health and safety risks with these activities.

Our drone flights have also been used to carry out surveys of 74 buildings supporting the identification and specification of repairs and removed risks such as working at height.

We continue to explore the potential of different sensing equipment such as thermal imaging on drones, which will support our asset inspection and environmental appraisal. This will also enable us to explore the possibilities of identifying leakage, protection of bats, and detecting badger setts, whilst continuing to embed their use into the Trust.



In the Trust we have:

7 operational
drones

10 approved
drone pilots



Place & Prosperity:

Supporting sustainable growth, boating, development & living

Canals have the potential to contribute far more to regeneration, local economies and quality of life. We want to work with partners to explore new opportunities while continuing to improve experiences for boaters and other users.

Opportunity 6: Better boating

Building on our 2025 Better Boating Plan, we are committed to improving the experience of those who live and spend their leisure time afloat. Innovation has an important role to play in helping us enhance navigation and infrastructure, improve journey essentials, deliver better communication and customer service, and innovative preventative maintenance techniques which will continue to enhance our boaters' experience.

We are particularly interested in solutions that improve accessibility, enhance customer information and communication, support vegetation management, and enable more proactive and preventative maintenance.

Opportunity 7: Growing local economies

Our canals already contribute to regeneration, placemaking and economic growth, helping to create attractive places to live, work and visit. But they also have the potential to deliver far greater value through climate resilience, low-carbon infrastructure and sustainable energy solutions, and cooling using the water across our system.

We are interested in innovation ideas that explore how canals can support renewable energy generation, community energy projects, heating and cooling water systems, and other place-based solutions that help communities adapt to a changing climate while unlocking economic and environmental benefits.



Working with partners to trial a new design of accessible mooring bollards

CASE STUDY: Cooling innovation at The Mailbox

The Mailbox, a mixed-use development in Birmingham, is a prime example of sustainable urban design, incorporating an innovative cooling system that utilises water from the adjacent Worcester & Birmingham Canal. This approach demonstrates how historic urban infrastructure can be repurposed to meet the environmental challenges of today and the future.

The system operates using water-sourced heat pumps, which extract thermal energy from the canal water. This energy is then used to cool the building's central chillers, providing an efficient and low-carbon alternative to conventional air-conditioning systems. Variable-speed pumps adjust water flow based on real-time cooling demand, maximising energy efficiency and minimising environmental impact.

By tapping into the canal, the Mailbox reduces its reliance on traditional electricity-intensive cooling methods, contributing to lower greenhouse gas emissions and operational costs. This innovative approach aligns with broader trends in the UK, where canals are increasingly recognised as viable sources for low-carbon heating and cooling. Similar systems have been implemented at locations in London and West Yorkshire, proving the concept's scalability and adaptability.

The Mailbox's canal-based cooling demonstrates that sustainable solutions can harmonise historic infrastructure with current and future needs, setting a benchmark for environmentally responsible urban developments.



CASE STUDY: Innovation and new technology

The Tyseley Energy Park, located along the Grand Union Canal, is a hub for clean energy innovation and technology in Birmingham. The park focuses on creating and commercialising solutions for low and zero-carbon power, heat, waste, transport, and recycling.

Opportunities are being explored to utilise our canals to move materials to the Energy Park by water, including exploring innovative uses of our canal network within the region.

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Tyseley Energy Park leverages cutting-edge technology to transform clean energy innovation across the West Midlands, stimulating new technologies that contribute to the region's plan to become a net zero-carbon economy by 2041. ”





Nature & Biodiversity:

Providing vital habitats & corridors for nature to thrive

Helping nature recover while adapting to a changing climate.

Our canal corridors already provide important habitats and ecological connections. We are looking for innovative approaches that help us strengthen biodiversity, improve environmental outcomes and reduce carbon emissions.

Opportunity 8: Decarbonisation and climate change

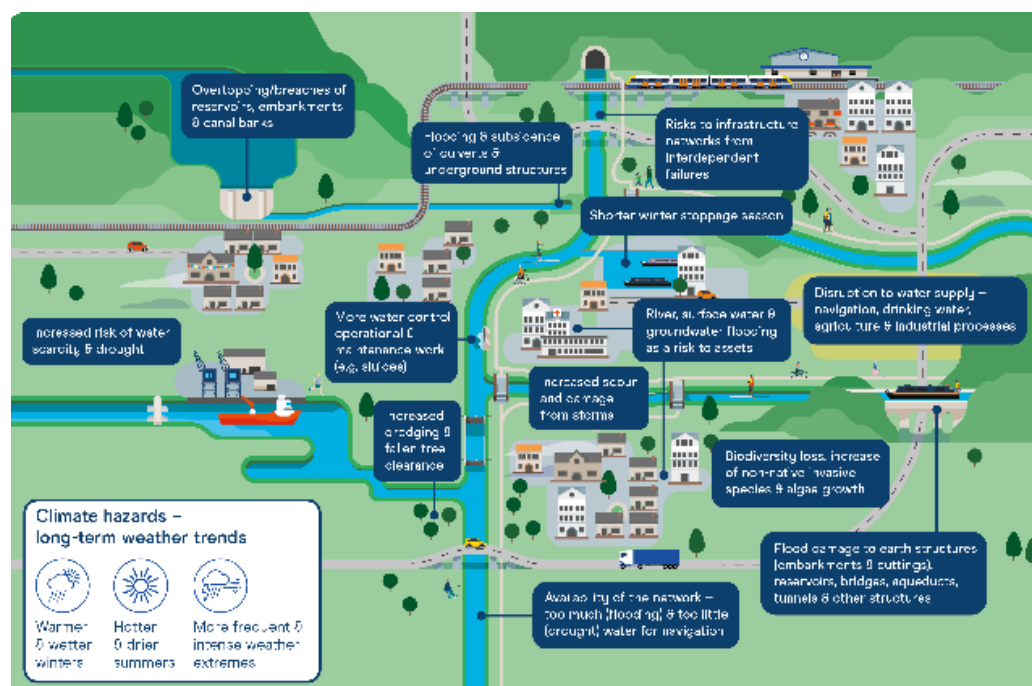
Climate change is one of the defining challenges for our waterways, from changing rainfall patterns and water availability to more frequent extreme weather events. We need innovative solutions that help our network adapt, improve resilience and reduce carbon emissions across our operations.

We are particularly interested in innovations that support renewable energy, the decarbonisation of our workboat fleet, sustainable boating for our customers, and more circular approaches to waste and resource management.

Opportunity 9: Protect and enhance biodiversity

Our canal network is a vital blue-green corridor that supports wildlife, connects habitats and contributes to nature recovery across England and Wales. As biodiversity pressures increase, we see significant opportunities to enhance the environmental value of our waterways and surrounding landscapes.

We are seeking partners and innovative solutions that improve water quality, increase understanding of ecological health, strengthen biodiversity monitoring and management, and tackle invasive non-native species. Together, these innovations can help create more resilient ecosystems and thriving waterways, helping protect and enhance biodiversity.



CASE STUDY: Unlocking Biodiversity (2021-25)

This project, which won the NGO Impact award 2025, has helped preserve and restore wildlife habitats in the West Midlands through a series of conservation and restoration works that have created ecological corridors and connected otherwise fragmented wildlife habitats. £675,000 of funding was received from Severn Trent as part of their Great Nature Boost project.

Over 231 miles of the region's canals were included as part of the project including the Walsall, Worcester & Birmingham, Coventry, Oxford, Trent & Mersey, Grand Union, Stratford-upon-Avon, Staffordshire & Worcestershire, Droitwich and Shropshire Union canals.

The main scope of the project involved working with volunteer groups to create new and enhance existing reedbeds to filter water and improve water quality. This will help support several animal species including the water vole, Britain's fastest declining mammal.

The project has also improved hedgerows and grasslands to create animal 'superhighways' along the canal to help boost numbers of butterflies and dormice, whilst existing heathland habitats have been improved and extended that will help protect a range of reptiles and mammals, including the small heath butterfly and the bilberry bumblebee.

Project outputs:

33km of aquatic margins were created using coir roll planting and bank management, significantly expanding water vole habitat into urban areas.

85ha of reedbeds were restored or established, enhancing habitat for amphibians, birds and rare mammals.

134km of species-rich grasslands were enhanced, targeting priority pollinator species with bespoke nectar and larval plant mixes.

54km of hedgerow restoration tailored to support declining species like the brown hairstreak butterfly, added vital wildlife corridors across rural and urban areas.

66ha of heathland were restored, with technical innovation in embankment soil remediation and rare acidic grassland creation in support of Natural England's regional strategy.

CASE STUDY: Electric Powered Workboats

We have been collaborating with NoPuttPutt who are refurbishing, retrofitting and trialling one of our Class 130 workboats with a battery and electric propulsion system. This will provide strong evidence and a proof of concept to help us to understand if battery powered boats are suitable for our work fleet needs and operation.

Our work boats have various technical challenges to overcome including, limited space for solar panels and being in remote locations for long periods of time, as they are used to support construction activities. They also contain operational kit, such as lifting equipment, which needs to be powered.

The refurbished boat is due to be trialled during Autumn 2026 and Spring 2027.



Why work with us?

The Canal & River Trust offers a unique platform for innovation.

Our canal and river network intersects with communities, infrastructure, nature, energy systems, water resources and economic activity across England and Wales.

Few organisations operate at the intersection of so many societal challenges and opportunities.

Working with us provides opportunities to:

- Test solutions within a real-world operating environment.
- Collaborate with experts across engineering, environment, heritage and customer services.
- Explore innovation at network scale.
- Generate evidence through live pilots and demonstrations.
- Develop solutions that create environmental, social and economic impact.
- Build partnerships that can unlock wider opportunities and investment.

We are particularly interested in organisations that share our ambition to improve resilience, address climate challenges, create better customer experiences and unlock new value from the canal network.



How we work

To deliver our strategic ambitions and to maximise our impact we have four key enablers to deliver our innovation opportunities.

Our enablers:	What it means for innovation:
Our Culture & People: We will be a diverse and inclusive, bold, forward looking and innovative charity.	We build on and continue to create an inclusive innovation culture across the Trust where people are empowered to bring new ideas, experiment and deploy innovative solutions.
Influence: We will be a credible and effective influencer and become the sector leader.	We work in partnership to bring in new ideas from other sectors and actively learn from others. We will be recognised for our contribution to innovation across our sector and others.
Income: We will secure sufficient income from diverse sources, be a 'partner of choice', delivering societal impact.	We proactively build partnerships and will be an effective collaborator. We will work with a range of innovation partners to leverage funding opportunities and support innovators.
Processes, Technology & Systems: We will have processes and systems that improve our capability and agility and drive productivity and efficiencies.	We will embrace innovative new technology, processes and systems that have clear use cases across the Trust. We will learn quickly from our innovation experiences and use them to deliver cost efficiency across the Trust.

Join us

We believe the future of canals will be shaped through building partnerships with like-minded individuals, collectives and organisations, based on innovation and collaboration.

While this prospectus highlights our current areas of focus, we recognise that innovation rarely follows a predetermined path. Whether you are developing new technologies, conducting research, investing in innovation, tackling infrastructure challenges or exploring ways to create social and environmental value, we would like to hear from you.

This prospectus is the start of a conversation.

Together, we can improve the resilience of our waterways, explore new possibilities for their future, and unlock benefits for communities, nature and the nation for generations to come.

Contact us:
innovation@canalrivertrust.org.uk



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