

UK Water Partnership

Water Industry Summit

18 October 2023

Collaborating to respond to the challenges of the Water Sector



Agenda

18 October 2023, Morning - Block 1

Time	Topic	Speakers
09:30 – 10:00	Registration	
10:00 – 10:05	Housekeeping	
10:05 – 10:15	Welcome and Introduction	Sarah Hendry (UKWP)
Block 1	Challenges and Opportunities to the Water Sector	
10:15 – 10:30	England	Nigel Watson (Northumbrian Water)
10:30 – 10:45	Scotland	Rosemary Greenhill (Scottish Government)
10:45 – 11:00	Wales	Gail Davies-Walsh (Afonydd Cymru)
11:00 – 11:15	Q&A for panel	
11:15 – 11:30	Keynote Speaker	Rebecca Pow MP
11:30 – 11:45	Q&A	
11:45 – 12:15	Break	

Agenda

18 October 2023, Morning - Block 2

Time	Topic	Speakers
Block 2	Challenges and Opportunities to the Water Sector	
12:15 – 12:30	Water Innovation Strategy	Carly Perry (Spring)
12:30 – 12:40	Data	Steve Salvin (Aimi)
12:40 – 12:50	Rising Star	Cassia Pickard (Future Water, Arup)
12:50 – 13:00	Selection of Challenges	
13:00 – 14:00	Lunch & Networking	

Agenda

18 October 2023, Afternoon - Block 3

Time	Topic	Speakers
Block 3	Water Sector's coordinated action – response to challenges	
14:00 – 14:15	Plenary – Introduction to the challenges	Hans Jensen (UKWP)
14:15 – 15:15	Workshops	
15:15 – 15:30	Break	
15:30 – 16:00	Plenary – report out	Hans Jensen (UKWP)
16:00 – 16:25	Validation of collaboration and commitments	
16:25 – 16:30	Formal Close	
16:30 – 18:00	Networking Reception	

Welcome and Housekeeping

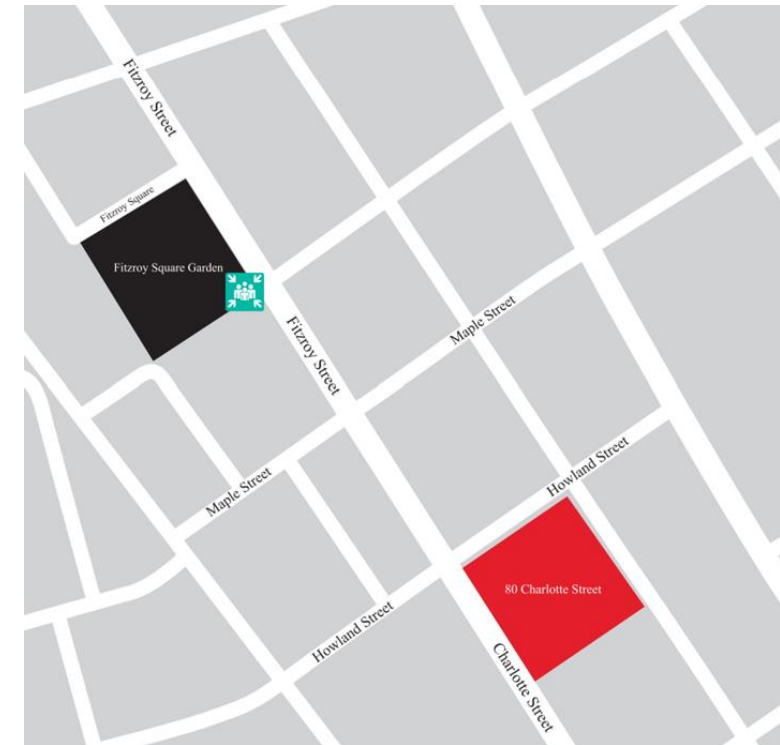
ARUP

The nearest washroom facilities are down the corridor to the right of reception.

We are not expecting a fire alarm this afternoon.

If the fire alarm does sound please head to the nearest fire exit with your host and proceed to the emergency assembly point at Fitzroy Square.

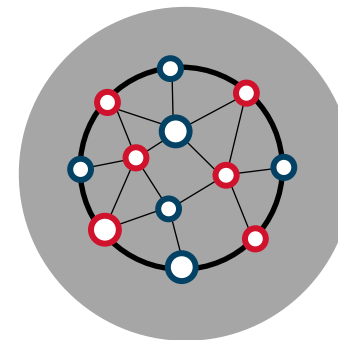
Please **do not** re-enter the building unless instructed to do so by authorised personnel or Arup host.



Welcome and introduction

Chair

Sarah Hendry, Chair, UKWP



Pooling *knowledge and resources* to address global water challenges



Supporting research excellence and promoting *collaborative innovation*



Tapping into the *\$500 billion global water market*



THE UK WATER PARTNERSHIP

We are here to provide *leadership and a unified approach*

Challenges and Opportunities to the Water Sector

England

Speaker

Nigel Watson, CIO, Northumbrian Water



Nigel has been CIO of NWG for more than 7 years. In that time, he has led the successful delivery of our transformation, with an overall ambition of making us the most digital water company in the world.

Nigel is also responsible for the innovation strategy and execution across the Group and is the father of our famous Innovation Festival, now in its 8th year. The event attracts c. 3,000 participants from 900 organisations around the world, generating hundreds of ideas to improve our industry.



UK Water Partnership Annual Summit 2023

Challenges and Opportunities in the Water Sector

For NWG... becoming the world's most digital water
company

Nigel Watson
CIO

NWG
living water

How are we performing...

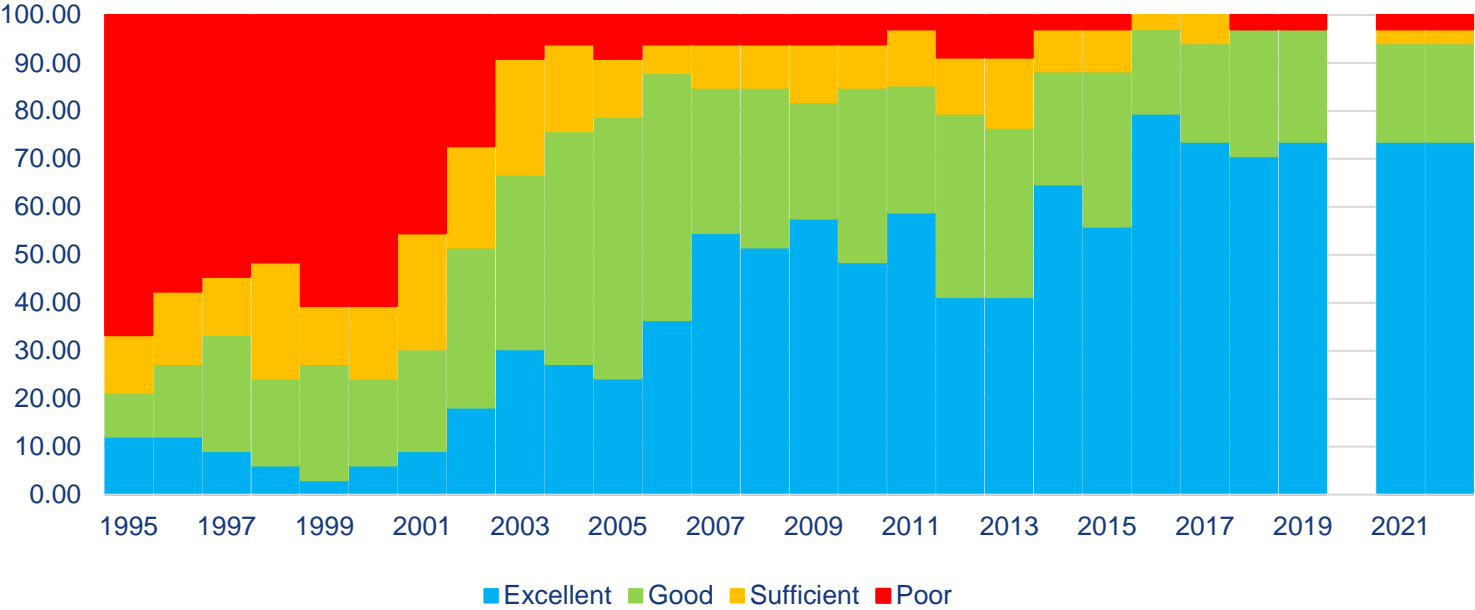
Rank	Company	C-Mex score
1	Northumbrian Water	83.74



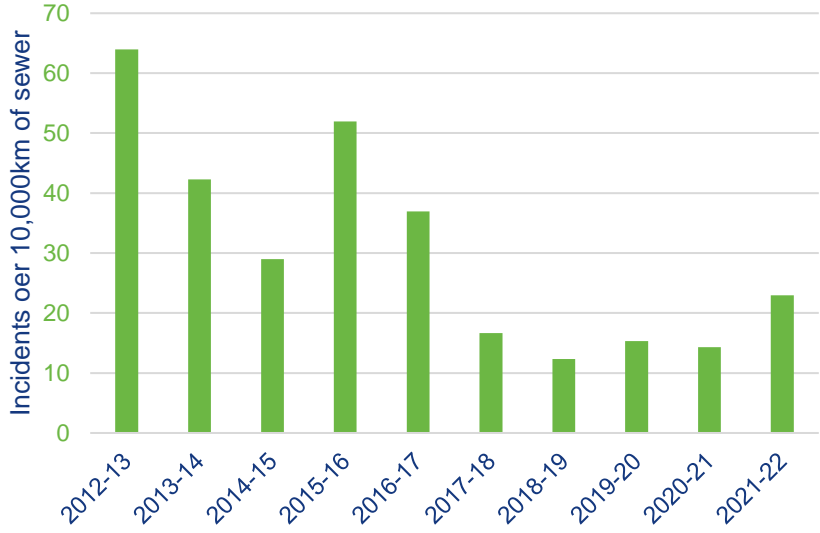
WATER COMPANY NEWS
 Water Matters Report ranks Northumbrian Water best for customer service



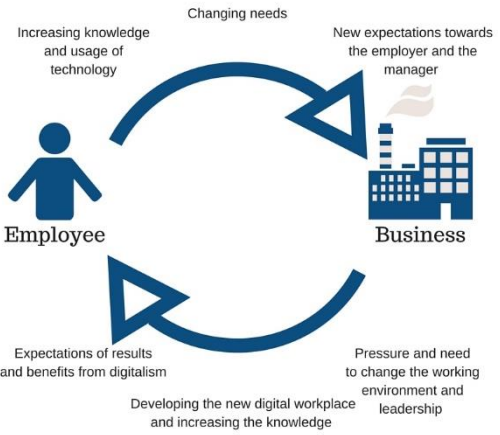
Bathing waters



Pollutions

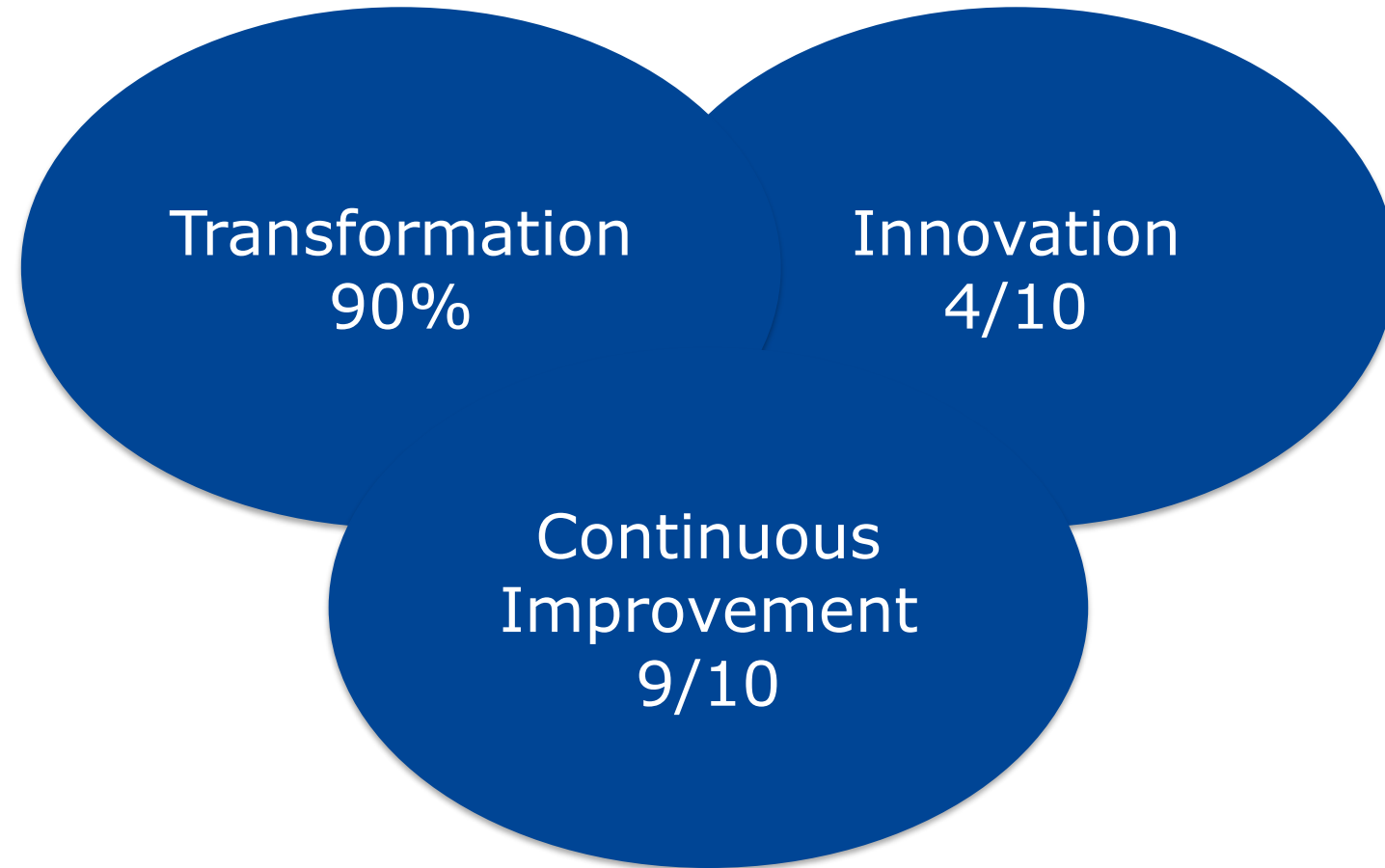


Facing into some large challenges...



Digital is a key enabler for improving the outcomes for society and the environment

The Three Engines of Change



Transformation

Transformation Architecture Overview

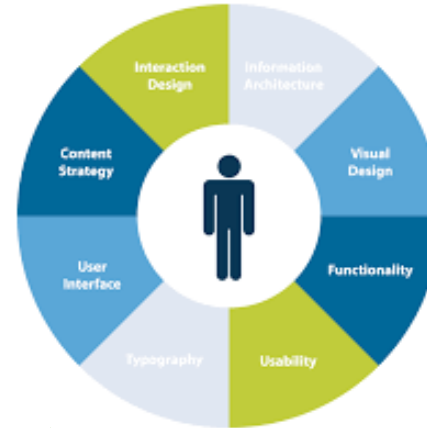
Getting value from data



AI that helps people



User Experience



Smart Networks/Digital Twins



Unified Communications

Integration Services

Customer Care and Billing

E-Business

Oracle Field Services Cloud

Customer Engagement Platform

Asset Management

Other Apps – SCADA, LIMS, GIS etc

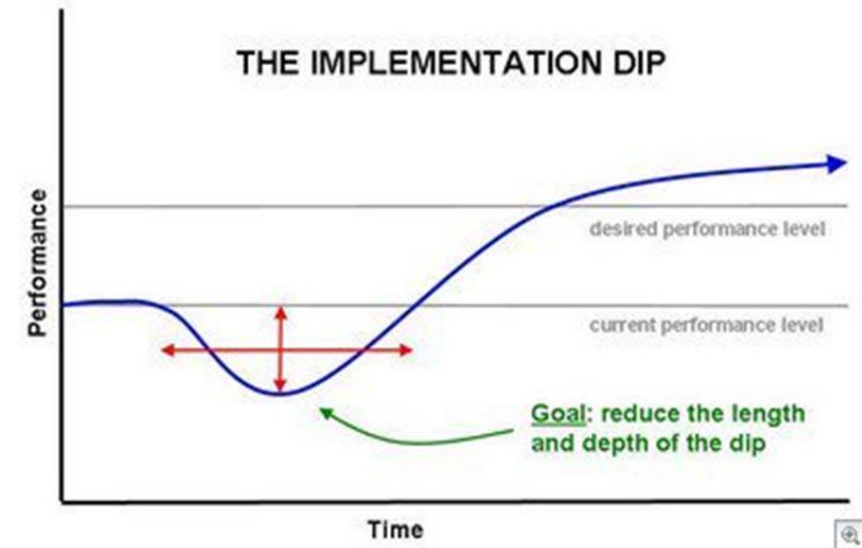
Cloud Apps and Services



Transformation – a few lessons learned



TRANSITION CRITICAL PATH ACTIVITIES	RAG STATUS	No Go/Go	Criteria	Impact	PROGRESS UPDATE	MITIGATION FOR RECOVERY	Post Mitigation Status
People and Communications Niki Storey	G	M	M	M	Daily lessons learned calls are underway for areas in CEP. Weekly Readiness communication delivered at level 2/3 for onward cascade.	Huddle activity will support communication messages, all team leaders will be involved and Change hero meetings are underway.	
Training Niki Storey	A	M	H	H	CEP Training completed for each phase –96% attendance. CC&B awareness overview completed and rolled out with 84% attendance, training will complete 26/09. 6 Core CC&B overview modules under development 51% completed, on the 22/09. Overall completion date early October.	Capacity/Cross skill plans are in place in 4 of the business areas. Additional 8 FTE to be brought into release capacity in CET and Contact Centres. Plan includes an incentivised overtime for training, to minimise performance impact, support well being and minimise overall opex costs	
Quarterly to half yearly Helen Lumsdon / Andrew Ledger	G	M	H	H	On track - 42,063 meters have been transferred to half yearly billing cycles.	Comfortable with schedule, and additional resource is available if required and we move off track.	
Data Cleanse Helen Lumsdon / Mark Wilkinson	A	M/D	H	H	Currently on track. Migration team are currently prioritising what activity needs to be complete prior to go live.	Customer accounts cross skill plan will provide the opportunity to put in additional resource if required. There is also remaining budget, to recruit 2-3 agency or overtime.	
Billing Timetable Helen Lumsdon	A	D	M	M	Billing timetable is largely on track; North & Essex are two days late, Suffolk is 6 days late due to slight delays in meter readings.	A cross skill plan has been produced in the area, and that has ensured we can have up to 17 FTE supporting the billing time table if required	
Meters to be Read Andrew Ledger	A	D	M	M	Meter reading timetable is recovering. North is two days late, Essex 3 days late and Suffolk 8 days late. On track to deliver 1 week ahead of schedule for go live.	Additional resources have been recruited and currently utilising the debt field advisors to support the plan.	
Meters for Installation Distribution	A	D	L	L	Numbers are reducing and distribution are forecasting installations will be up to date late October/early November.	Additional resource will be required post go live to update accounts.	
Outstanding Issues in ICIS All CLT - lead Julie Jackson	R	D	M	M	Report issued weekly to each business lead, who are currently working on their glide paths to go-live.	Each business area to review current plans, by the end of September to prioritise work streams.	
Outstanding Contacts in PLUS2 All CLT - lead Richard Seales	A	D	L	L	Plan under construction – Agreed 2 phases: Phase 1 – Billing – end of Oct and Phase 2 Operations Plus 2 end of June 18.	Each business area to review current plans, by the early October, to prioritise work streams. <i>Please note not dependant for TS3 go-live, and will be a key focus for IAM, starting focus early.</i>	



Embedding change takes time

Innovation

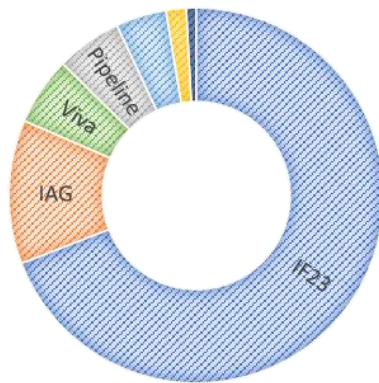
INNOVATION DASHBOARD 2023

INNOVATION CULTURE

24.2% employees actively involved (target 25%).

>500 Training hours

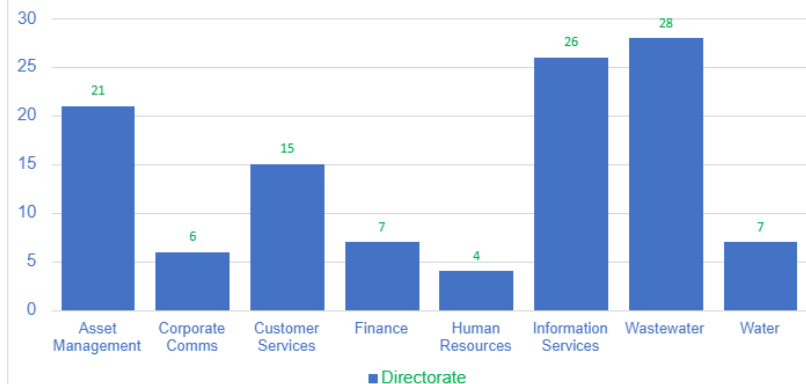
IF23 IAG Pipeline Ofwat R&D Viva IQ23



116 Innovation Ambassadors (Grown from 14 in 2018)

37 external speakers to inspire Ambassadors

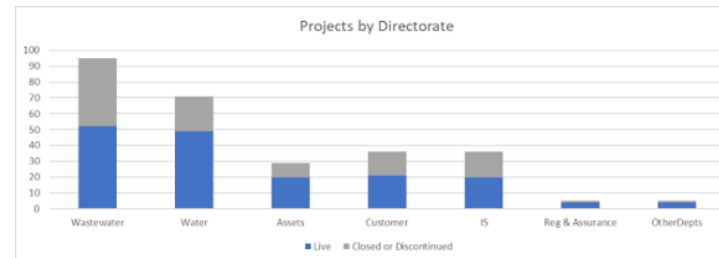
Innovation Ambassadors 2023



INNOVATION PIPELINE

149 live projects

£78M/annum potential value



Innovation Stage Gates



EXTERNAL ENGAGEMENT

- 2900** attendees at IF23
- £170M** potential IF23 project value
- 3.8M** Social & media reach IF23
- 6000** readership of Innovation Connect
- 22** External Speaker Slots 2023
- No1** for innovation in UK Water Sector*
* (British Water Survey 2022 and 2023)



EXTERNAL FUNDING

- £6.6M** awarded in Breakthrough 3.
- 1** successful Transform bid, Stream
- 3** successful Catalyst bids (root defender, water literacy toolkit and hydro-powered concentric meter)
- £18.9M** external funded since 2021
- 12** successful bids, **#1** water co
- 164% vs contribution**, **#1** vs water cos
- 18.5%** of total fund won by NWG

R&D PROGRAMME

- 34** live Core R&D projects
- NWG funding / total cost: **£1.1m / £3.4m**
- 23** UKRI funded academic projects
- Total grant value: **£30.1m**
- 50** NWG colleagues directly involved in R&D
- 11** current university collaborations
- 87** postgraduate students supported
(22 live / 65 completed)
- 3** R&D projects into successful OFWAT funding bids worth **£2.0m**

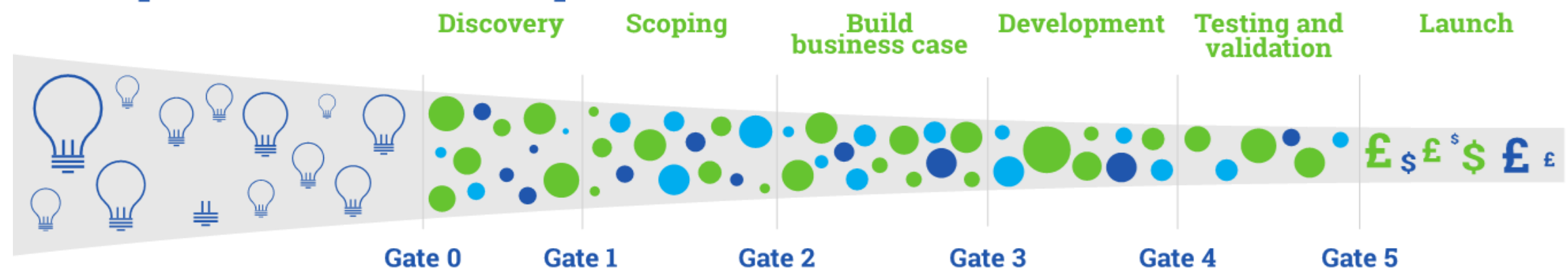
IF23 Project progress

Sponsor	Update	Est. Value	Funding (£)	RAG
Jacobs	Partners in place, funding secured and POC being planned to identify key opportunities.	105M	20K	Green
ESRI1	Moving forward within established WW project using learnings from the festival.	12.5M	WW	Green
Siemens	Three high potential sites identified, defining clear success criteria and evaluating technologies.	10M	20K	Green
Wave	Technical specifications and current market status scoped. Background research done.	10M	20K	Green
Kraken	Water & energy usage app MVP. On hold as no resource to support this project.	10M	20K	Red
Cyclomedia	Roads and Pavement material database study scoped and commissioned.	3M	23K	Green
WRc	R&D project is in the planning stage. Deep dive planned for 5/10.	2M	25K	Yellow
Rivers Trust	Rivers Trust driving the creation of a Community Interest Company.	1M	-	Green
TCS	Service Reservoir Programme delivery tool – 6 and 12-18 month plan now established	1.3M	20K	Green
SE	POC planned at a water and waste water site to gather data on quality of the electric supply.	100K	12.5K	Green
Ntegra	A POC will scope out what is needed for a solution to gather asset information from the field.	100K	20K	Green
Galliford Try	Ofwat bid being considered. A deep dive on energy efficiency planned for 6/11.	300K	20K	Yellow
Siemens	Bugging out hack is creating a Catalyst bid and building POC to support bid.	100K	20K	Green
Esri 2	Mappportunity PM and plan in place, securing extra funding.	Tbc	12.5K	Green
Aiimi	Insight Engine built for assets information retrieval application and now working with IS.	Tbc	Tbc	Green

Idea Development

Concept Development

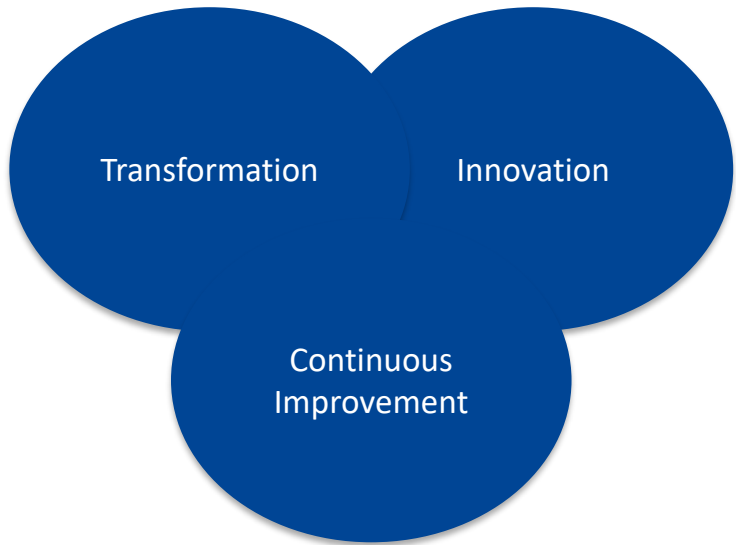
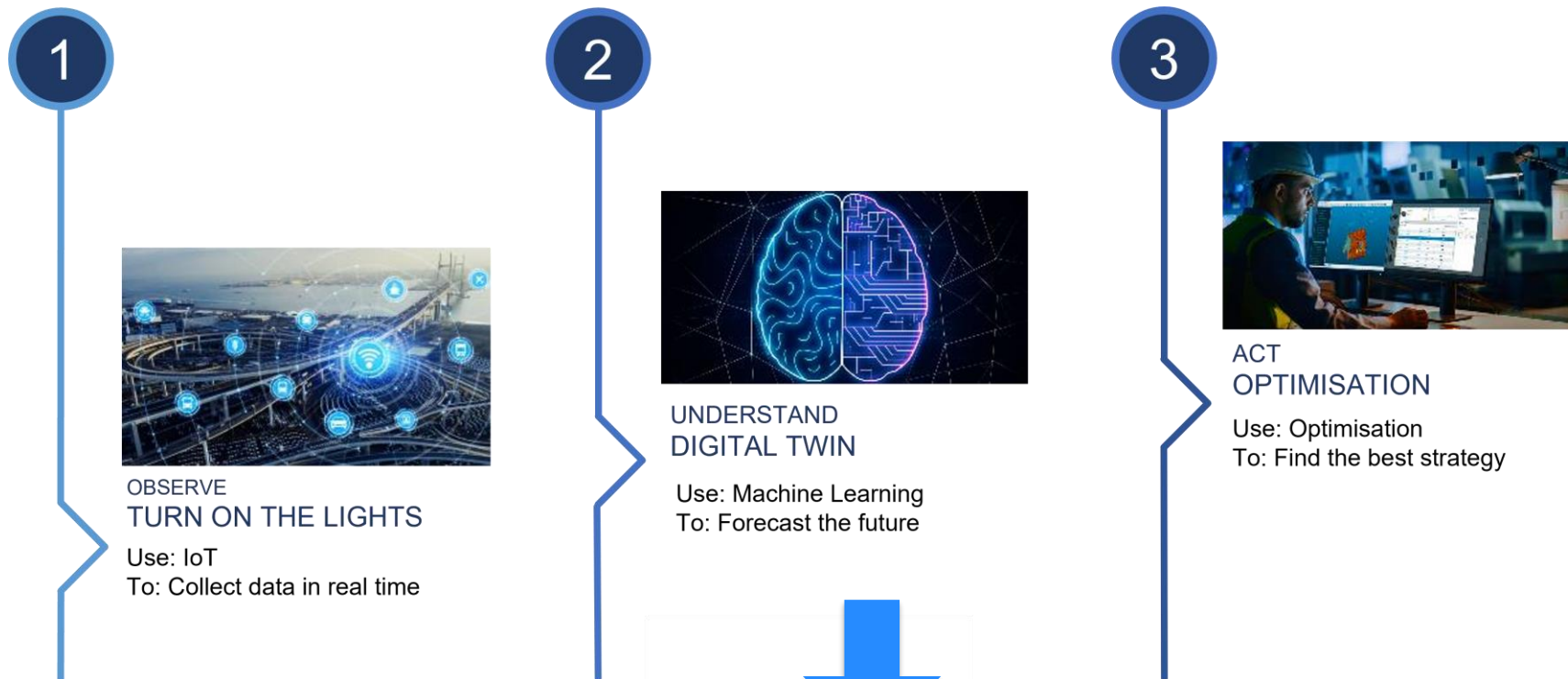
Concept-to-Launch



Solving Challenges

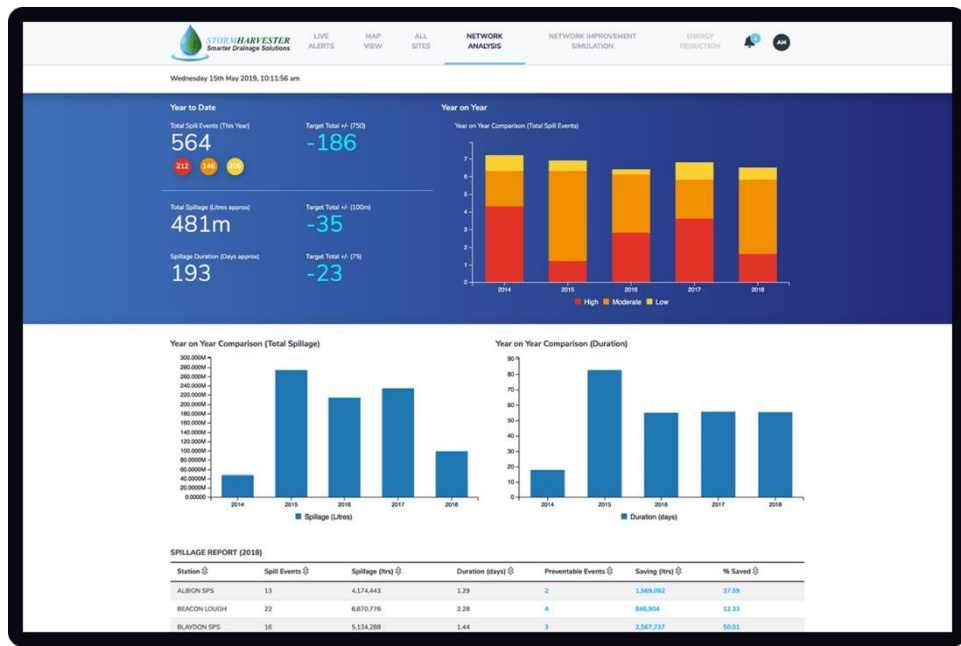
Solving the problem of storm overflows

Transformation - A Real-time Control Smart Sewer System



Continuous Improvement – Storm Harvester

Innovations

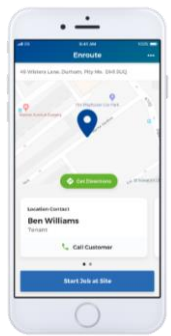


Solving the problem of leakage

Transformation – Intelligent Asset Management

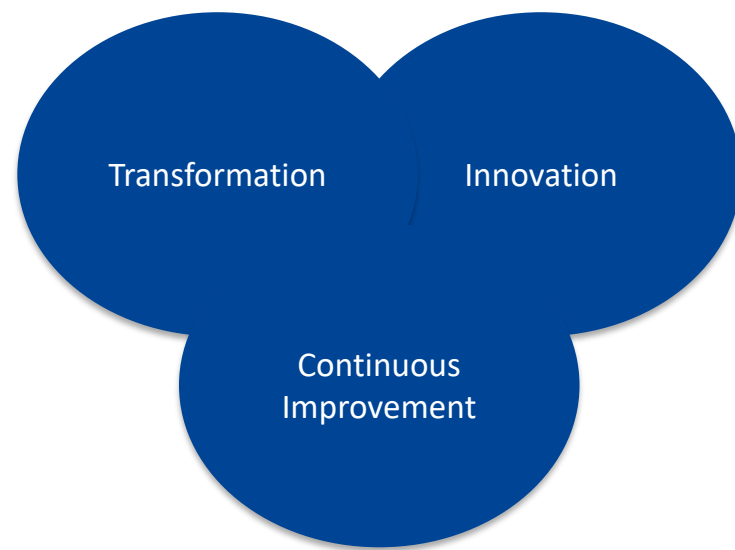


Continuous Improvement – Tuning the processes



Response time to visible leaks

52% ↓



Innovations





How can we delight our customers in new ways?



How can we work smarter?

A learning organisation



How can we perform even better?



How can we continue to be a great place to work?

Challenges and Opportunities to the Water Sector

Scotland

Speaker

Rosemary Greenhill, Head of Water Policy, Scottish Government

- Head of Water Policy at the Scottish Government
- Civil Servant for last 30 years following study for a PhD in river flooding.
- Worked in the water industry within the Scottish Government for over 20 years.
- Advising Ministers on policies relating to their ownership of Scottish Water, charging and investment.



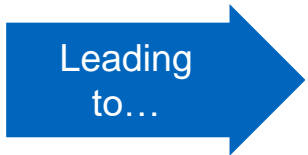
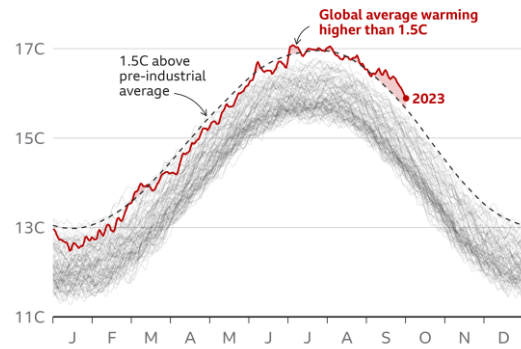


Challenges and Opportunities to the
Water Sector
A view from Scotland

Climate change is impacting the industry at an unprecedented rate

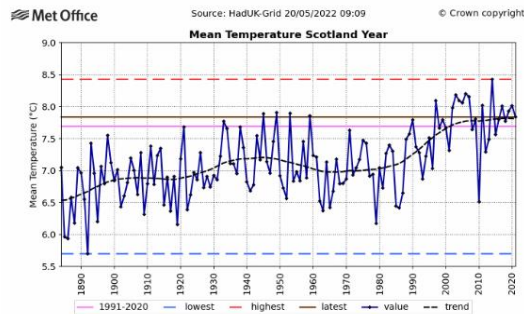
It's getting warmer

Record number of days breaking 1.5C in 2023
Daily global average air temperature, 1940-2023



Strathclyde Loch
September 2021

Scotland - Mean temperature
Annual

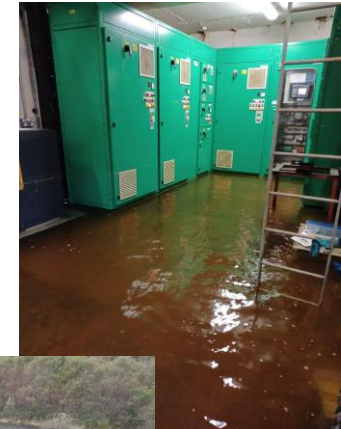
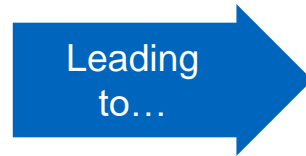


Poor quality
raw water
that is hard to
treat

Climate change is impacting the industry at an unprecedented rate

Storms are more intense

...damage to assets

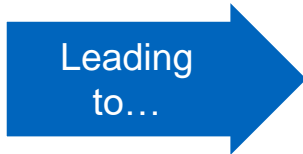


Climate change is impacting the industry at an unprecedented rate

Greater likelihood of prolonged dry spells



Scottish Borders 2022



Alternative supplies on Skye
2023



Glendevon 2022



Tankering to maintain
supplies

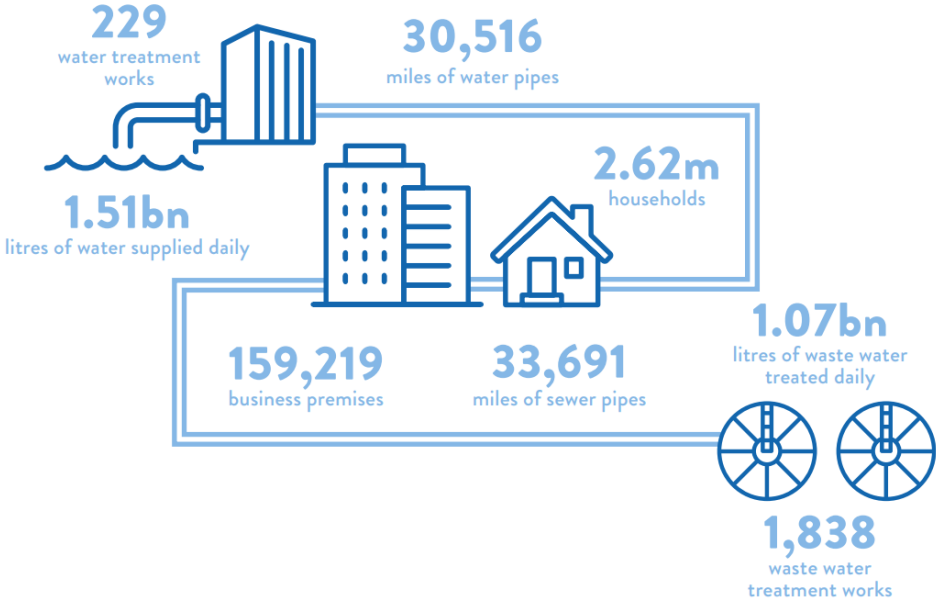


Climate change is impacting the industry at an unprecedented rate
And impacting consumers and the environment too



Ageing assets

Assets are old and not resilient to climate change
There are lots of them:



Opportunities?

Climate change does present opportunities

On water:

Delivering new lower carbon solutions
Embracing new digital technologies
Securing the multiple in catchments –
biodiversity, peatland restoration etc.



Opportunities?

Climate change does present opportunities

On drainage:

Delivering new lower carbon solutions
Improving the water environment
Securing multiple benefits -improved drainage, less rain in sewers, improved urban environments



Challenges and Opportunities to the Water Sector

Wales

Speaker

Gail Davies-Walsh, Chief Executive Officer,
Afonydd Cymru



Gail has over twenty-five years' experience in the environmental sector, having worked in environmental consultancy, water companies in England and Wales, and the Rivers Trust. She has been Afonydd Cymru's CEO since 2021. Afonydd Cymru is the umbrella body for rivers trusts in Wales, providing advocacy for Welsh Government and Natural Resources Wales. Our vision is for clean and healthy rivers for every community in Wales.

Gail is currently technical advisor to the Welsh Government Taskforce for Better River Water Quality, a member of the Wales Water Forum and the Wales Fisheries Forum. Afonydd Cymru have also been supporting Nutrient Management Boards since January 2023 on governance and accountability structures, and to support thinking on making catchment-wide improvements.





afonydd cymru
caring for welsh rivers

Opportunities and Challenges from an eNGO perspective

Gail Davies-Walsh, CEO, Afonydd Cymru





afonydd cymru
caring for welsh rivers

Opportunities

- Devolution is allowing more consistent and objective environmental policy (for example, to further strengthen Flood and Water Management Act for highways drainage, implementing nature-based solutions into policy)
- Challenge existing delivery models and mechanisms – upskilling workforces, looking at how to use different delivery mechanisms
- Data gateways for Wales – single, consolidated datasets
- Technological advancement through new areas of working together
- Catchment/ wholescape delivery across a spectrum of impacts
- Outcome-based catchment planning



afonydd cymru
caring for welsh rivers

Challenges

- You can't control the greatest challenge of all
- Management of cross-border rivers – the impact of lack of integration (policy, process) to delivering solutions (and the failure to respect the differences)
- Large-scale infrastructure funding – how do we fund the environmental performance we need to see?
- Glidepaths to 2050
- Not working in silo's needs people to consider how to work a different way
- Solutions in a catchment are dependent upon agricultural reform – water quality, water resources, permitting
- The rate of decline is currently far outweighing the improvement

Challenges and Opportunities to the Water Sector

Wales

Speaker

Nicola Thomas, Deputy Director of Environment and Rural Affairs EU Exit & Strategy Unit, Welsh Government



Nicola leads the division overseeing the strategic evidence needs for the Rural Affairs and Environment Sustainability directorates at Welsh Government. She also leads on inter-governmental relations supporting Ministers for Rural Affairs and Climate Change and has responsibilities for the development of border controls for sanitary and phyto-sanitary goods and the implementation of the Windsor Framework in Wales.

Her previous roles at Welsh Government include Deputy Director for Land, Nature & Forestry, Deputy Director for Environment Protection, Head of Water and Head of Environment Act Implementation. Nicola has a background in environmental science and spent a number of years with the Environment Agency, Wales and Head Office, covering roles in water resources. She started her career in environment monitoring with Welsh Water, National Rivers Authority, and environmental consultancies.





Llywodraeth Cymru
Welsh Government

Water Industry Summit

Challenges and opportunities for the water sector - Wales

Nicola Thomas

Deputy Director, Strategic Evidence, Borders &

Inter-governmental relations

Welsh Government

Strategic Context

The Well-being of Future Generations Act 2015 - 7 Wellbeing Goals



Healthy water environment, safe clean water and sufficient supply underpins all the wellbeing goals

Programme for Government 2021-2026

Embed our response to the climate and nature emergency in everything we do

The well-being objectives have been set in accordance with the sustainable development principle and the 5 ways of working:

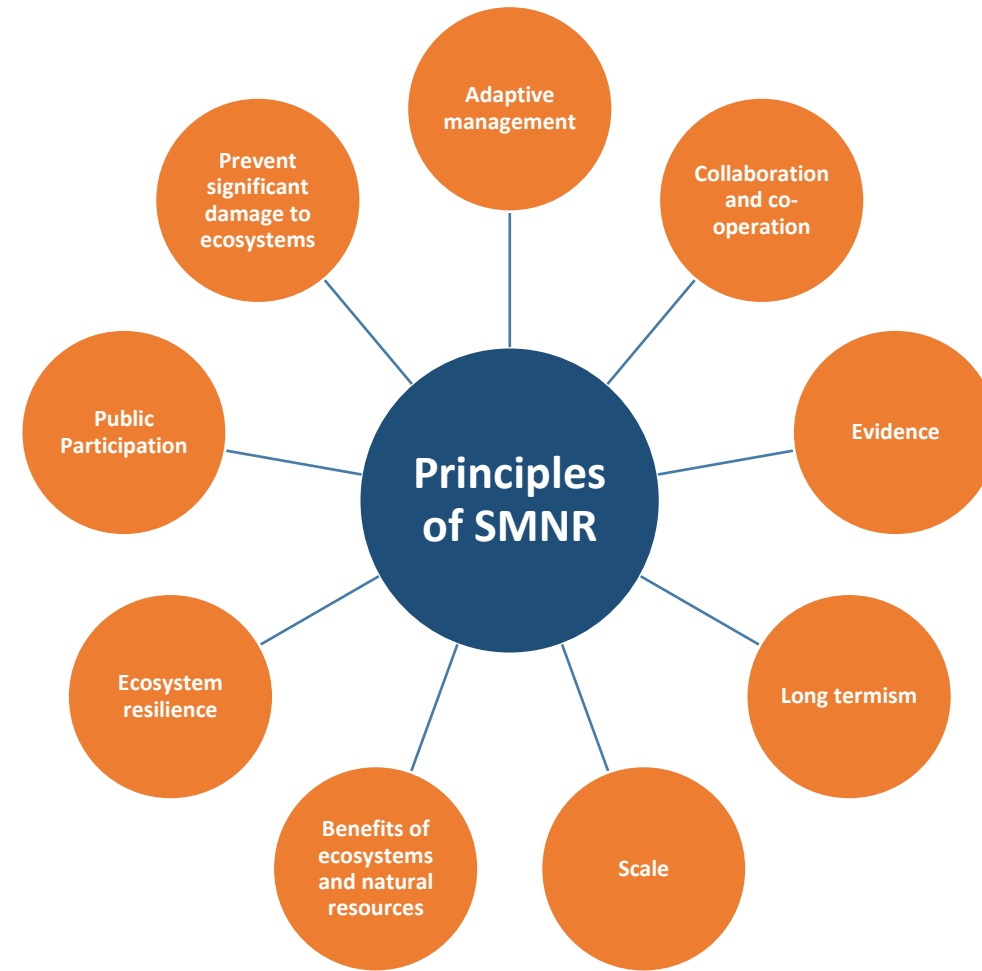
- Long term
- Integration
- Involvement
- Collaboration
- Prevention



Begin to designate Wales' inland waters for recreation, strengthening water quality monitoring

Environment (Wales) Act 2006

- Introduces the sustainable management of natural resources (SMNR)
- SMNR is about managing these resources in a joined up way that delivers real outcomes for the environment, people, the economy and our communities.
- Our aim is to make the most of the opportunities that Wales' natural resources present while safeguarding and building the resilience of natural systems to continue to provide these benefits over the long term.



Current State of Wales' Waters

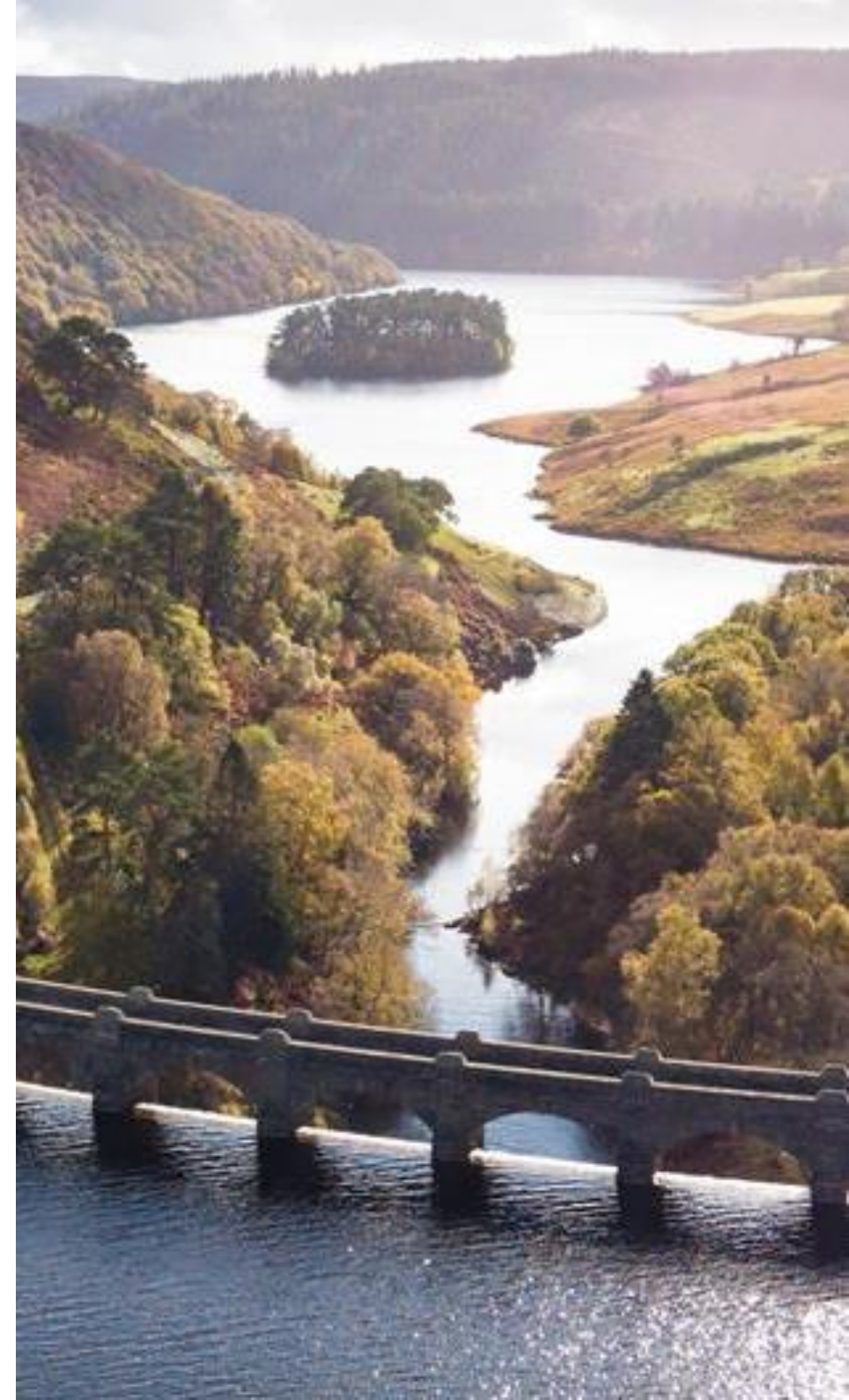
- **Excellent drinking water quality (99.97% compliance with statutory standards for mains supply)**
- **40% of waterbodies at good or better ecological status, with 44% of rivers achieving this classification under WFD**
- **93% of waterbodies at good or better chemical status**
- **109 designated bathing waters (mostly coastal) 99% were classed as sufficient or better in 2022.**
- **61% of Special Areas of Conservation rivers not meeting Phosphorus standards (NRW data 2021)**
- **Pollution concerns: agricultural run-off, wastewater discharges, industrial pollution, abandoned metal mines**

A team Wales approach is required to deliver at scale and pace to realise our ambitions for nature and the climate, and we must each understand our role for delivery. A thriving water environment is essential for supporting healthy communities, flourishing businesses and biodiversity. To enable this, we need to reduce the pressure on our water environment...

Oral Statement on Water Quality by Julie James MS, Minister for Climate Change, Senedd 15 November 2023

Our Approach

- Better River Quality Taskforce – considering the management of storm overflows; includes WG, NRW and water companies
- Phosphorus Summit to manage SAC Rivers
- Action Plan to Relieve Pressures on SAC River Catchments to Support the Delivery of Affordable Housing
- Water monitoring – collaborative exploration of a shared platform with academics, NGOs, water companies and other stakeholders
- Improving our already globally leading statutory SuDS legislation



Example of the Welsh approach: Pressure on our Special Area of Conservation (SAC) Rivers

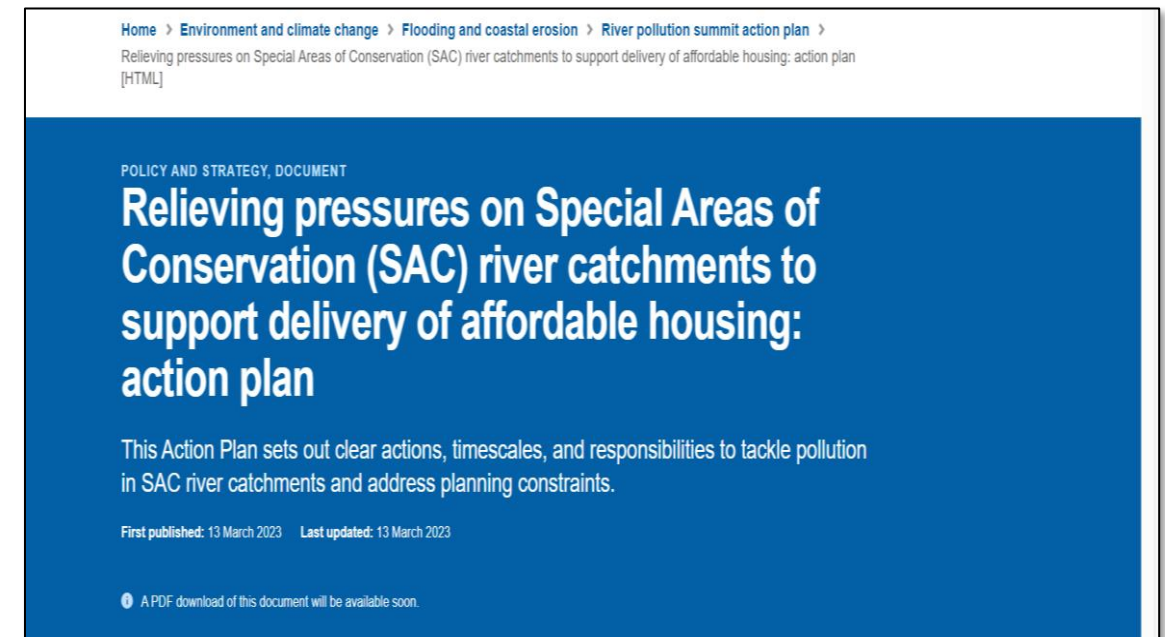
- phosphorus pollution in Wales' SAC rivers is a serious issue which defies easy solutions, with more than 60% SAC rivers failing phosphate targets
- phosphorus pollution is having an impact on our natural environment, our communities, and the economy.
- pressing need for the development of more housing in Wales – water quality is therefore one of the reasons the development of essential new homes has been paused, impacting on the Welsh Government's commitment to build 20,000 new low carbon social homes to address the housing crisis.
- sources of nutrients come from multiple sources
- There is no single solution - no quick fix

Why is it so hard?

- Historically, as a society, we have not cared about where our waste goes.....
- Historically we have not connected all these pressures together.
- Everyone has a stake but not responsibility
- A lot of people to build consensus for action
- Cumulative effect of practices
- Legislative and regulatory controls designed to tackle specific issues
- Disjointed data collection – inconsistent and across multiple organisations
- Allows disputes in the evidence.
- Rivers are complex systems that can respond in unexpected ways
- Climate change pressures

Welsh Ministerial Response

- On 18 July 2022 the First Minister convened a summit to discuss phosphorus pollution of SAC rivers in Wales.
- regulators, water companies, developers, local government, farming unions, academia, and environmental bodies to discuss the development of a strategic and joined-up approach to improving the quality of our SAC rivers.
- significant work by all stakeholders has allowed a greater understanding of the issues
- Team Wales approach - new Action Plan
- different parties have different responsibilities – not just Welsh Government
- progress is slow but this is a new approach and expectations are high



Welsh Ministerial Response

Action Plan

Eight themes for action:

- Governance and oversight
- Nature-based solutions
- Agricultural solutions
- Addressing planning constraints
- All Wales nutrient calculator
- Mitigating actions
- Catchment consenting
- Nutrient trading

Challenges and Opportunities to the Water Sector

Panel Questions

Speakers

Nigel Watson

Rosemary Greenhill

Gail Davies-Walsh

Ann Humble



Challenges and Opportunities to the Water Sector

Keynote Speaker

Keynote Speaker

Rebecca Pow, MP



Rebecca Pow was appointed Parliamentary Under Secretary of State at the Department for Environment, Food and Rural Affairs from 28 October 2022.

Rebecca was previously appointed Parliamentary Under Secretary of State at the Department for Environment, Food and Rural Affairs from 10 September 2019 to 7 July 2022 and a Parliamentary Under Secretary of State at the Department for Digital, Culture, Media and Sport between 23 May 2019 and 10 September 2019.



Department
for Environment
Food & Rural Affairs

Challenges and Opportunities to the Water Sector

Questions

Keynote Speaker

Rebecca Pow, MP



Department
for Environment
Food & Rural Affairs

Water Industry Summit

Break

We will resume at 12:15

Challenges and Opportunities to the Water Sector

Water Innovation Strategy

Speaker

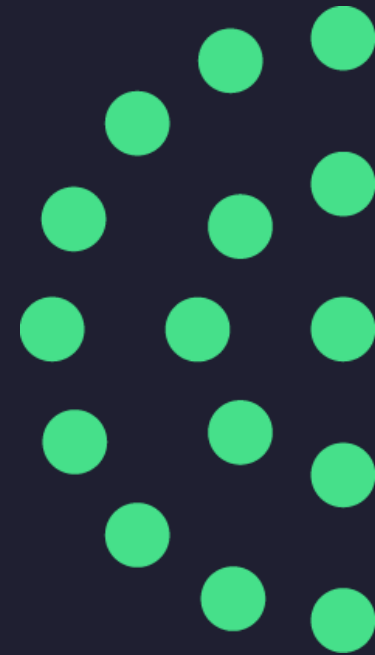
Carly Perry, Managing Director, Spring



In May 2022, Carly commenced her role as the first Managing Director of the UK water innovation centre of excellence, Spring. She brings over 15 years of experience into her role having led water teams as a management consultant in Sia Partners and PA Consulting. Her experience spans across regulation, strategy and innovation with an extensive and broad background, working with water companies to deliver cross sector collaborations. Before the Centre of Excellence she has also led the UK water sector to design an Open Data Strategy. She brings a huge amount of passion for collaborative working and solving the sectors big challenges.



Spring - The Centre of Excellence for Water Innovation in the UK & Ireland



**Spring is an innovation
accelerator that enables collaboration
within and beyond the water sector to
drive transformational innovation**

We are proud to represent all of the 18 UK & Ireland water companies



severn dee



The background of the entire page is an underwater scene. It features a deep blue color palette. On the right side, there is a bright light source, possibly the sun or a lamp, which creates a shimmering effect and illuminates a trail of numerous small, clear bubbles that rise towards the top of the frame. The overall texture is slightly grainy, typical of an underwater photograph.

UK 2050

WATER INNOVATION STRATEGY

PUBLISHED SEPTEMBER 2020

OUR STRATEGY

Our vision for this innovation strategy

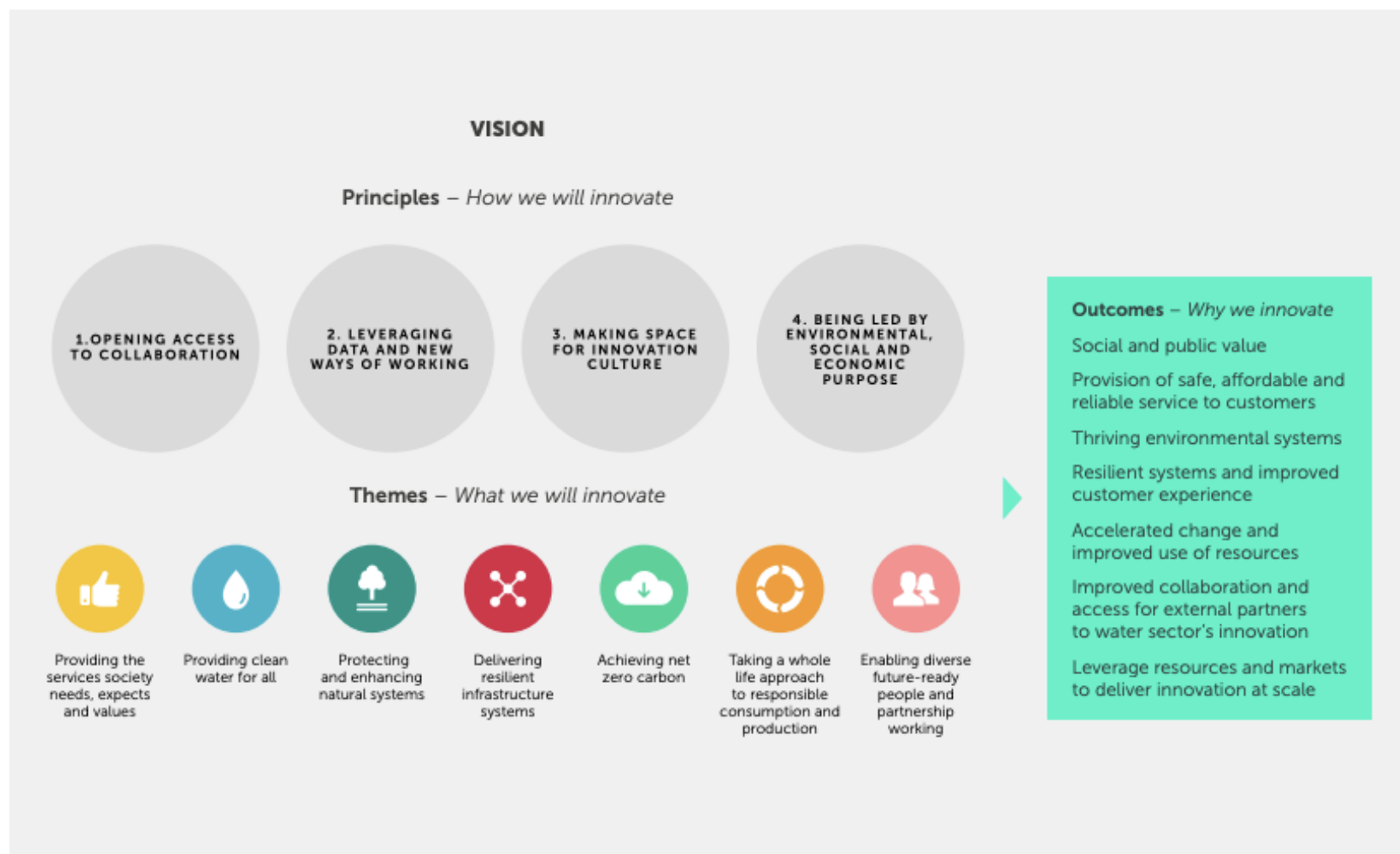
To create open collaboration opportunities across the water sector to drive transformational change through innovation that delivers greater value for customers and the environment.

This vision sets out our aim for innovation in the water sector. This vision is supported by:

Four principles which are ways of working, detailing how we plan to innovate. These are cross-cutting changes that are required to inform and guide all of our innovation activity to take opportunities to grow and further enhance strengths highlighted on the previous page.

Seven themes which are the topics we have identified to support us in delivering innovation that is led by environmental, social and economic purpose. They will support us in responding to the drivers highlighted on the previous page, and the issues that are important to our customers.

Our vision, principles and themes are designed to support us in delivering the outcomes that we have identified.



THEMES AT A GLANCE



PROVIDING THE SERVICES SOCIETY NEEDS, EXPECTS AND VALUES

AMBITIONS FOR 2050

Customers have trust and confidence in the service that the water sector provides

Water services are accessible, affordable for all, protect vulnerable customers and lead to zero customers in water poverty by 2030

Service provision is transparent, and customers and communities work with water companies to improve service and decision making



PROVIDING CLEAN WATER FOR ALL

AMBITIONS FOR 2050

Drinking water supply is low impact and sustainable

UK water supply is reliable with zero interruptions

We provide enough water for all across the UK



PROTECTING AND ENHANCING NATURAL SYSTEMS

AMBITIONS FOR 2050

Wastewater services are environmentally sustainable

We work with customers to halve freshwater abstractions, leaving more water in the environment

Water companies work in collaboration with customers and communities to have zero uncontrolled discharges from sewers

Emerging contaminants and lead are dealt with effectively causing zero harm for people and the environment

We have developed, protected and enhanced our natural environment

We have used natural solutions to improve our resilience to current and future challenges



DELIVERING RESILIENT INFRASTRUCTURE SYSTEMS

AMBITIONS FOR 2050

We work with customers to develop resilient human, physical and digital systems which can adapt to known and unknown future challenges

Our assets are maintained for the long term providing economic, social and environmental value



ACHIEVING NET ZERO CARBON

AMBITIONS FOR 2050

We have achieved operational and value chain carbon negativity

We have implemented carbon sequestration across the water sector

Customers, communities, water companies and the supply chain work together to achieve carbon neutrality across the value chain



TAKING A WHOLE LIFE APPROACH TO RESPONSIBLE CONSUMPTION AND PRODUCTION

AMBITIONS FOR 2050

We have maximised the recovery and reuse of resources to support sufficient resource availability for nature and society and achieved zero waste

We have sustainably achieved zero leakage



ENABLING DIVERSE FUTURE-READY PEOPLE AND PARTNERSHIP WORKING

AMBITIONS FOR 2050

We have a shared innovation culture which improves customer experience

Collaboration pathways are paved between water companies, regulators, supply chains, SMEs, start-ups, academia, customers and other innovators to allow innovation to work

The whole sector's workforce has the skills and diversity of thought to take an active approach to prepare for and address emerging challenges

The UK regulatory framework has evolved to incentivise innovation to benefit customers and the environment



**PROVIDING THE SERVICES SOCIETY
NEEDS, EXPECTS AND VALUES**

**We need to innovate to build customers' trust
and deliver transformational customer service.**

Ambitions for 2050	Short-term aims	Medium-term aims	Long-term aims
<p>Customers have trust and confidence in the service that the water sector provides</p>	<p>Our communications reflect the needs of our customers and are efficient and effective (especially in an emergency). For example:</p> <ul style="list-style-type: none"> • through communication platforms like 'How to' service of online videos, video calling, automated and smart payment mechanisms • through ethnographic and universal research approaches to help understand the cultural and social drivers of customer needs, expectations and behaviours • through solutions such as blockchain 	<p>All our customers have an excellent consistent customer experience from our service provision on top of delivering our regulatory service requirements and changing circumstances.</p>	<p>Customers are part of the journey: co-creating with customers is a routine part of all work that happens across the water sector to build customer trust and willingness to contribute to achieving common goals</p>
<p>Water services are accessible, affordable for all, protect vulnerable customers and lead to zero customers in water poverty by 2030</p>	<p>Customer service is flexible and reflects the needs of all customers inclusively. For example:</p> <ul style="list-style-type: none"> • by using multiple platforms and engagement approaches • innovative tariff structures and joined up, cross sector billing Improved use and modelling of customer data allows us to better predict vulnerability, debt and other service issues <p>The water sector has a shared understanding of water poverty (that considers future regional and external drivers) and a strategy to appropriately measure and overcome it</p> <p>The social value of supporting households experiencing water poverty is understood</p> <p>Best practice water poverty interventions, appropriate for the context, are implemented</p>	<p>All decision making considers optimisation of social capital (as part of introducing wider capitals beyond financial return into decision frameworks)</p> <p>Collaboration with public sector, private sector and customers has led to a better understanding of the role and remit of water companies in supporting the delivery of public benefit such as environmental purpose and regional connectivity</p> <p>There are no customers in water poverty. Tariff structures reflect ability to pay and provide improved affordability support to customers experiencing water poverty and those struggling to pay</p> <p>Customers consider water and wastewater services to deliver good value for money</p>	<p>Communities of customers are supported by the water sector to collaboratively support vulnerable customers, especially during an emergency or supply interruption</p>
<p>Service provision is transparent, and customers and communities work with water companies to improve service and decision making</p>	<p>Decision making processes are transparent so that our customers can better understand how we make decisions which provide the best societal value, regarding things such as network investments, emergency response, engagement and pricing</p> <p>Engagement spreads to all water users, not just bill payers to improve the visibility of the sector, enabling greater understanding of our work</p>	<p>The amount and type of data we openly share with customers is reviewed regularly and aligned to improve transparency in areas that customers identify as important. For example:</p> <ul style="list-style-type: none"> • improved data sharing about live network conditions as an information source for customers 	<p>We share our progress and data openly, and in a way that is meaningful to our customers</p> <p>Customers and water companies undertake collaborative decision making</p>
TOWARDS 2025		TOWARDS 2035	
			TOWARDS 2050

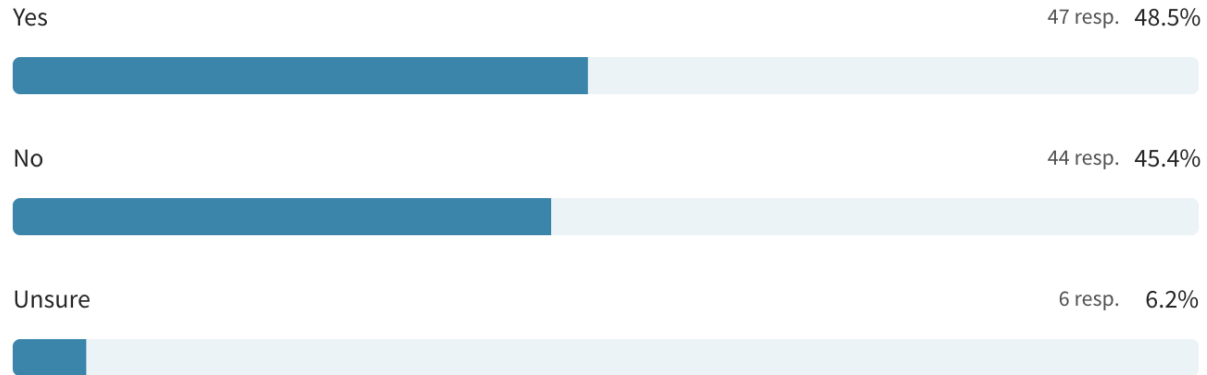
How might we refresh this document?



WIS 2050 Survey Results

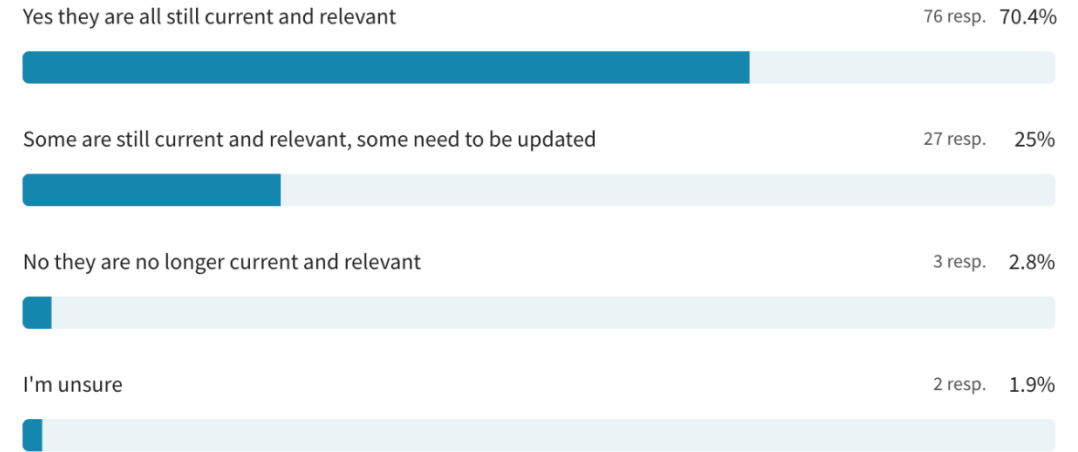
Have you used the Water Innovation Strategy 2050?

97 out of 109 answered



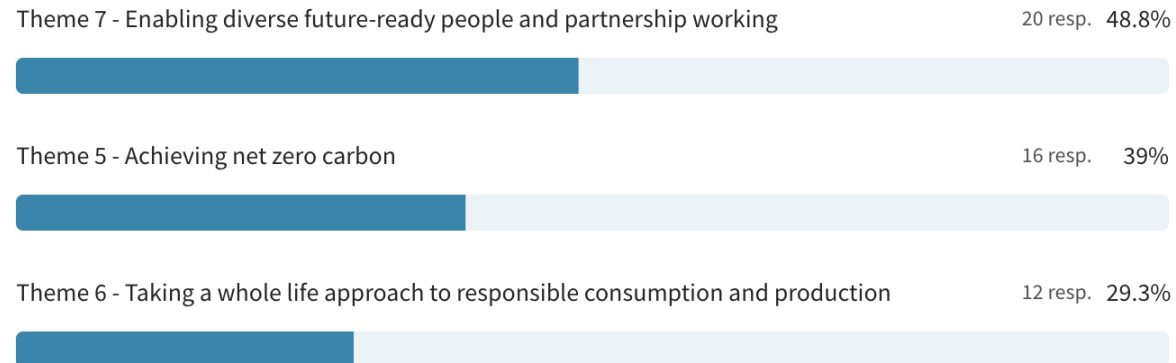
Do you feel the WIS 2050 themes are still current, and relevant for the sector?

108 out of 109 answered



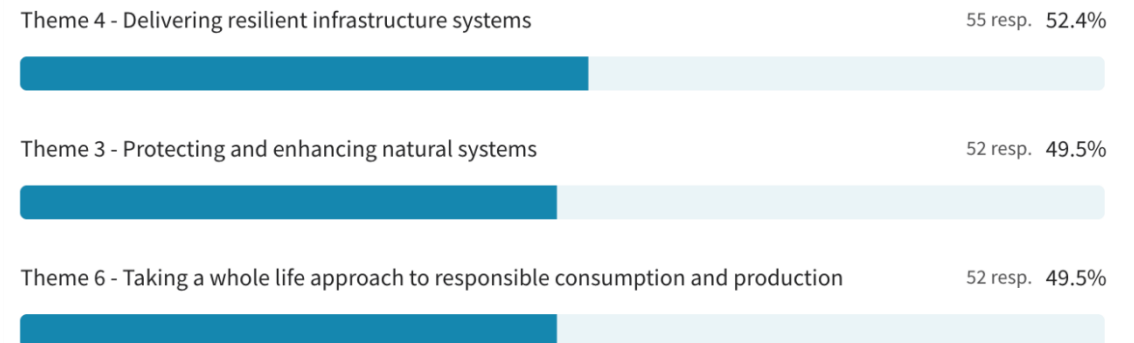
Which WIS themes do you feel are no longer current and/or relevant?

41 out of 109 answered



Which WIS themes do you feel the water sector needs to focus more on?

105 out of 109 answered



How do we collectively deliver
the ambitions in the strategy?



The sector has collaborated to design a Water Innovation Strategy as the north star that binds our innovation ecosystem together.



PROVIDING THE SERVICES SOCIETY NEEDS, EXPECTS AND VALUES

PROVIDING CLEAN WATER FOR ALL

PROTECTING AND ENHANCING NATURAL SYSTEMS

DELIVERING RESILIENT INFRASTRUCTURE SYSTEMS

ACHIEVING NET ZERO CARBON

TAKING A WHOLE LIFE APPROACH TO RESPONSIBLE CONSUMPTION AND PRODUCTION

ENABLING DIVERSE FUTURE-READY PEOPLE AND PARTNERSHIP WORKING

In affiliation with..



Accelerating Water Sector Transformation



Informing, Innovating, Influencing



THE UK WATER PARTNERSHIP



UK Water Industry Research



Innovate UK
KTN



Together we innovate



water industry forum
part of BRITISH WATER

There is already an ecosystem delivering specific ambitions within the Water Innovation Strategy and we want to create an affiliation model to connect the existing initiatives and further remove duplication in the sector.

What does it mean to be a Water Innovation Strategy affiliate?



PROVIDING THE SERVICES SOCIETY NEEDS, EXPECTS AND VALUES



PROVIDING CLEAN WATER FOR ALL



PROTECTING AND ENHANCING NATURAL SYSTEMS



DELIVERING RESILIENT INFRASTRUCTURE SYSTEMS



ACHIEVING NET ZERO CARBON



TAKING A WHOLE LIFE APPROACH TO RESPONSIBLE CONSUMPTION AND PRODUCTION



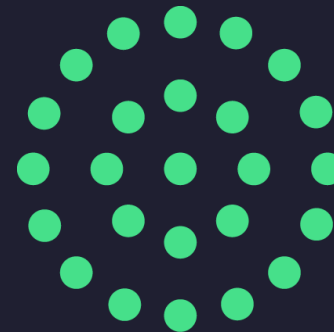
ENABLING DIVERSE FUTURE-READY PEOPLE AND PARTNERSHIP WORKING

The purpose of the affiliate group is to connect the existing excellence in the sector that already delivers against the ambitions in the strategy. With 200+ ambitions to deliver, we recognise that collaboration is required to collectively deliver the Strategy and remove duplication of efforts across the innovation ecosystem. Specifically, we will:

- Connect and share existing efforts to solve Water Innovation Strategy ambitions to ensure duplication is avoided
- Share knowledge and insights from existing efforts to solve Water Innovation Strategy ambitions to allow others an accelerated learning opportunity
- Where relevant, input subject matter expertise to the affiliate groups efforts to solve ambitions together
- Support the ambitions in the strategy and develop ambitions as the supply and demand for innovation evolves
- Help to gain exposure for the Water Innovation Strategy to ensure that innovators are aware of the priority statements



Thank you



admin@spring-innovation.co.uk

Challenges and Opportunities to the Water Sector

Digital

Speaker

Steve Salvin, Chief Executive, Aiimi



Steve Salvin is the founder and CEO of Aiimi. He has worked in data management for 30 years and for the last 9 years has worked closely with the water industry. Aiimi are experts in data and AI, and are the lead data partner in Stream



ALL
INFORMATION
IS
MADE
INSIGHTFUL.

aiimi

DATA ANSWERS INSIGHTS.

STEVE SALVIN, CEO OF AIIMI

AIIMI AT
A GLANCE.

AIIMI SERVICES:

STRATEGY /
HACKATHONS /
DIGITAL / DATA

MEMBERS:

BRITISH
WATER



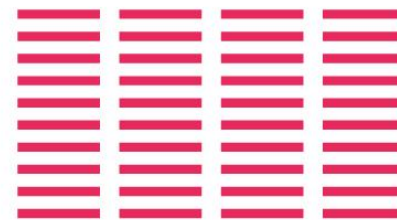
LEAD DATA PARTNER:

Stream.

PROJECTS:

150+

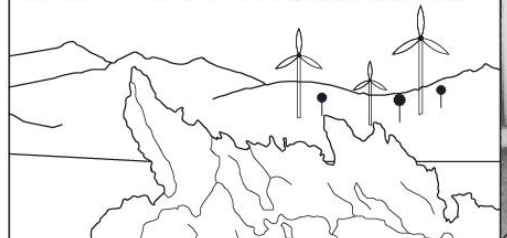
PROJECTS IN
WATER IN AMP 7



NET ZERO:

NET ZERO THROUGH
INVESTMENTS IN WATER.

- _2013-2018 EMISSION OFFSET PROJECT:
Zoba Anseba Community Safe Water Project (Gold Standard VER)
- _2019 EMISSION OFFSET PROJECT:
Uganda Borehole Rehabilitation Project (Gold Standard VERs)
- _2020 EMISSION OFFSET PROJECT:
VP Biosupply Wastewater Treatment & Biogas Utilization Project (VCS)
- _2021 EMISSION OFFSET PROJECT:
Kenya Reforestation - 65 Kenyan Trees in the Great Rift Valley
- _2022 EMISSION OFFSET PROJECT:
Zoba Anseba Community Safe Water Project (Gold Standard VER)





WE'VE ALL BEEN THERE...

WE DON'T TALK ABOUT
DATA GOVERNANCE
HERE.

GET TO YOUR ANSWERS.

WHERE A COMPANY DIFFERS FROM OTHERS WITHIN THE INDUSTRY IN TERMS OF HOW IT INTERPRETS REPORTING GUIDELINES AND RANK IN THE CORRESPONDING REPORTING MEASUREMENTS?

WHICH QUESTIONS COULD WE ASK CUSTOMERS AT POINT OF CONTACT THAT WOULD ALLOW US TO DETERMINE, WITH A REASONABLE LEVEL OF CONFIDENCE, IF A PROBLEM IS RELATED TO OUR ASSETS WITHOUT ATTENDING SITE AND WITHOUT ASKING THE CUSTOMER?

WHAT COMPANY(IES) HAVE MADE THE BIGGEST IMPROVEMENT IN FLOODINGS? AND HOW?

WHAT STRATEGY DO EACH OF THE OTHER WASC'S TAKE FOR DECIDING WHEN TO REPAIR THEIR STORM TANKS BACK INTO TREATMENT WORKS TO AVOID THEM SPILLING INTO THE ENVIRONMENT?

HOW WILL PLANNED CHANGES IN LAND AND WATER USE (HOUSING, URBANISATION ETC) IN CATCHMENTS AFFECT SEWERAGE SYSTEMS AND RIVER QUALITY (ON THE BASES THAT CATCHMENTS DON'T RESPECT WATER COMPANY BOUNDARIES)?

SUMMARISE THE KEY DIFFERENCES BETWEEN MY DRAFT BUSINESS PLAN AND THE OTHER WATER COMPANIES'?

SOURCE: REGULATOR PUBLICATIONS / COMPANY WEBSITES

HOW CAN AI HELP?

SEARCH FEELING LUCKY

WHICH OF OUR 20,000 ALARMS THAT GO OFF DAILY ARE MOST IMPORTANT AND WHY?

SOURCE: TELEMETRY / SCADA

HOW CAN WE BEST MODEL PREDICTIONS REGARDING FUTURE WATER AVAILABILITY ACROSS REGIONS (AND CORRESPONDING USAGE BY DIFFERENT POPULATION DEMOGRAPHICS) IN ORDER TO PREDICT AND PLAN FOR THIS UNCERTAIN FUTURE?

HOW WILL MOVING CUSTOMERS ONTO DIGITAL, SELF-SERVICE PLATFORMS AFFECT CUSTOMER SATISFACTION?

WHAT IS THE MOST OPTIMAL APPROACH WASC'S CAN TAKE TO TARGET INVESTMENT IN ORDER TO TACKLE OVERFLOWS (AND CONSEQUENT POLLUTIONS) IN THE MOST OPTIMAL, EFFICIENT MANNER POSSIBLE?

CAN WE PREDICT AND MITIGATE LIKELY SERVICE FAILURES ACROSS OUR TREATMENT NETWORK?

CAN WE EXPLORE ENERGY (AND OTHER PERFORMANCE) DATA AND SEE WHAT THEY LOOK LIKE FOR DIFFERENT REGIONS ACROSS THE COUNTRY?

WHAT IS THE OPTIMUM LEVEL OF INVESTMENT IN EACH DISTINCT CATCHMENT OF THE NETWORK TO AVOID BLOCKAGES AND FLOODING?

SOURCE: ACORN DATA / RIGHTMOVE

WHAT ARE THE CHARACTERISTICS THAT MAKE A PROPERTY MORE OR LESS SUSCEPTIBLE TO BLOCKAGES AND FLOODING?

SOURCE: GIS

ALL
INFORMATION
IS
MADE
INSIGHTFUL.

DIVESTING OUR RESPONSIBILITY FOR GOVERNANCE.

ALL
INFORMATION
IS
MADE
INSIGHTFUL.

HOW CAN **AI** HELP US TO SORT OUT OUR DATA?

DATA DISCOVERY / CLASSIFICATION /
LABELLING / QUALITY

ALL
INFORMATION
IS
MADE
INSIGHTFUL.

DATA QUALITY

WE CAN BE MORE ACCURATE AND CONFIDENT IN OUR DECISIONS.

DATA DISCOVERY

WE CAN FIND OUR DATA NOW.

DATA CLASSIFICATION

WE KNOW WHAT EACH RECORD IS (INVOICE, CONTRACT, SURVEY).

DATA LABELLING

WE CAN CONNECT OUR DATA TOGETHER (PEOPLE, PLACES, ORGANISATIONS, ASSETS, SITES).

HOW CAN AI HELP US TO SORT OUT OUR DATA?

DATA DISCOVERY / CLASSIFICATION / LABELLING / QUALITY

BUSINESS AREAS WHERE DATA & AI CAN ADD IMMEDIATE VALUE.

ASSET INTELLIGENCE.

EXAMPLE SOURCES:

O&M MANUALS & SITE SAFETY INFORMATION.

OPPORTUNITY:

- Find the relevant information they need.
- Use natural language text/voice to ask questions and get answers in the field.
- Get access to advice that will help them do their work safely and efficiently.

CUSTOMER SERVICES.

EXAMPLE SOURCES:

LETTERS, EMAILS, AND CALL TRANSCRIPTIONS.

OPPORTUNITY:

- Customer services agents can take the next best action.
- Classify customer contact for complaints and regulatory reporting.
- Providing summaries/timelines of customer communications.

SELF-SERVICE HR.

EXAMPLE SOURCES:

HR RECORDS, STAFF HANDBOOK AND POLICIES.

OPPORTUNITY:

- 24/7 mobile services to find answers to questions about employment and work-related matters.

OPERATIONAL CONTROL CENTER MANAGEMENT.

EXAMPLE SOURCES:

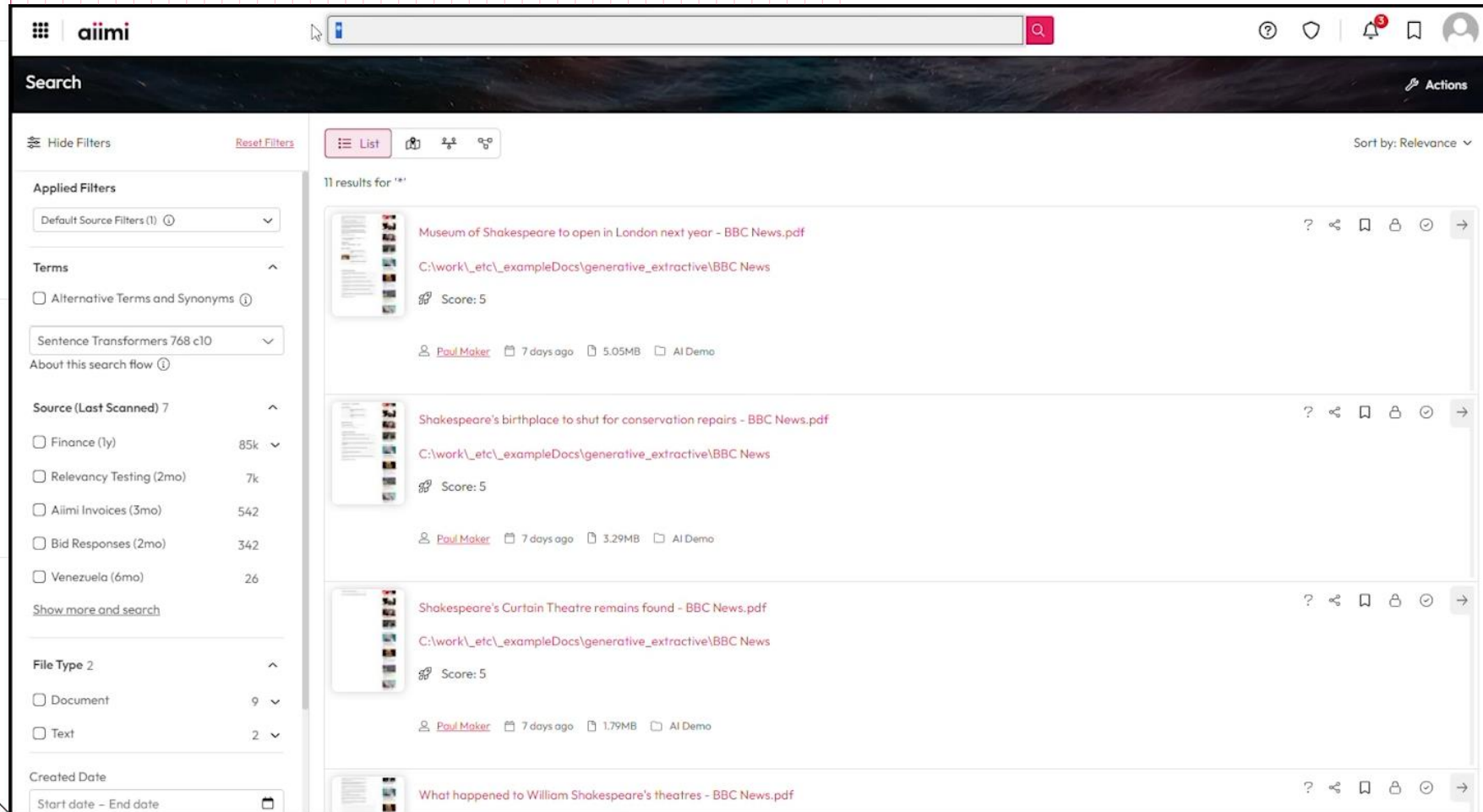
DASHBOARDS, REPORTS, APPS, MESSAGING PLATFORMS.

OPPORTUNITY:

- Find information/ask questions across multiple, disparate sources.
- Summarise events and shifts to improve stakeholder communications.
- Access knowledge and lessons learnt from previous events.

AI PRODUCTIVITY OPPORTUNITIES.

Q&A / SUMMARISATION / TASKS / SPARRING PARTNER



CREATE REPORTS, PRESENTATIONS, AND COMMUNICATIONS.

“ PREPARE AN INCIDENT REPORT FOR MY SUPERVISOR.

AI FOR TASKS

ASK A QUESTION OF ANY DATA AND GET THE ANSWER.

“ WHEN WAS THE LAST ACCIDENT AT THIS SITE?

AI FOR Q&A

CREATE SUMMARIES OF DOCUMENTS, EVENTS, AND CONVERSATIONS.

“ SHOW ME A TIMELINE AND SUMMARY OF ALL COMMUNICATIONS WITH THIS CUSTOMER.

AI FOR SUMMARISATION

TEST, VALIDATE, AND MAKE THINGS BETTER.

“ ARE THERE ANY FACTS IN THIS REPORT THAT ARE NOT SUBSTANTIATED?

AI SPARRING PARTNER

BLACK BOX THINKING.

LEARN: PREDICT FAILURE, BE NOTIFIED, ACT.

- AI CREATES A SUMMARY OF EVERY INCIDENT, ACCIDENT, MAJOR EVENT, JOB, CUSTOMER COMPLAINT.
- LABEL THE SUMMARY WITH OUTCOMES.
- SAVE THE SUMMARY AS A KNOWLEDGE BASE ARTICLE.
- TRAIN AI MODELS THAT CAN PREDICT BAD OUTCOMES IN REAL TIME.
- SUGGEST ACTIONS TO MITIGATE FAILURE.

CREATE REPORTS, PRESENTATIONS, AND COMMUNICATIONS.

“ PREPARE AN INCIDENT REPORT FOR MY SUPERVISOR.

AI FOR TASKS

ASK A QUESTION OF ANY DATA AND GET THE ANSWER.

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“ ARE THERE ANY FACTS IN THIS REPORT THAT ARE NOT SUBSTANTIATED?

AI SPARRING PARTNER

UNLOCKING YOUR POTENTIAL.

DIGITAL EXPERIENCES.

BUSINESS
INTELLIGENCE.

DATA SCIENCE.

OPEN DATA.

ARTIFICIAL
INTELLIGENCE.

DATA GOVERNANCE.

DIGITAL.

UNLOCKING YOUR POTENTIAL.

DIGITAL EXPERIENCES.

BUSINESS
INTELLIGENCE.

DATA SCIENCE.

Stream



ARTIFICIAL
INTELLIGENCE.

DATA GOVERNANCE.

DIGITAL.

A	L	L	Z	G	£	X	L	&	B	V
I	N	F	O	R	M	A	T	I	O	N
I	S	W	N	T	%	2	D	I	?	3
M	A	D	E	G	Q	S	B	A	N	P
I	N	S	I	G	H	T	F	U	L	£

aiimi

Challenges and Opportunities to the Water Sector

Rising Star

Speaker

Cassia Pickard (Future Water Association, Arup)



Hi, my name is Cassia Pickard and I have recently joined Arup as a Graduate Water Consultant. I have a strong interest in water as a resource; the driving force of nature. I am a trusted member of any team and relish the opportunity to collaborate with a variety of people to achieve the highest standard. I take on every day with an optimistic mindset to grow and evolve. I am driven to take on feedback and seek opportunities as I begin my journey to a successful career in the water sector.



CASSIA PICKARD

Graduate Water Consultant - Arup

Innovation

Cultural
Relevance

Public
Engagement

EMBRACE DIVERSE PERSPECTIVES
& LEVERAGING THE POWER OF
INTERDISCIPLINARY THINKING

Problem Solving

Equity and
Inclusion

Resilience

Workforce
Development

Innovation



Problem Solving



Cultural Relevance



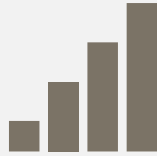
Public Engagement



‘I think that the general public don’t particularly understand the water industry and how it operates.’– Alex Henderson, Graduate Civil Engineer Arup

‘We really don't understand the scale of the problem, and there should be more transparency of all the options to the general public.’ –Louisa Rhodes, Graduate Water Consultant Arup

Resilience



‘If I could choose one thing to work on it would have to be resilience- making the outcomes of projects adaptable to the changing weather conditions. That will add immense value and extend their life cycle.’ –Boyan Mladenov, Graduate Civil Engineer Arup

Workforce Development



1. Engagement with educational institutions
2. Rectifying misconceptions
3. Showcasing of the sector's opportunities across varied disciplines
4. Displaying that it is an exciting and forward-thinking sector



THANK YOU

Challenges and Opportunities to the Water Sector

Selection of Challenges



www.menti.com
Code: **3602 7355**

Water Industry Summit

Lunch

We will resume at 14:00

Water Sector's coordinated action

Challenges



Challenge 1

River Health

Fitzrovia Collaboration Space

Facilitated by Mark Fletcher,
British Water



Challenge 2

Future Talent

Open Space

Facilitated by Paul Horton, Future
Water Association



Challenge 3

Customer Perception

Open Space

Facilitated by Jeremy Galpin
and Adrian Rees



Challenge 4

Data Challenges and Opportunities

Room 15

Facilitated by Mike Hull and Steve
Salvin, Aiimi



Challenge 5

Water Innovation Strategy

Room 16

Facilitated by Carly Perry, Spring



Workshop Introduction

Challenge:	
Barriers:	Opportunity:
Who:	How:

Water Sector's coordinated action

Workshops: 14:15-15:15



Challenge 1

River Health

Fitzrovia Collaboration Space

Facilitated by Mark Fletcher,
British Water



Challenge 2

Future Talent

Open Space

Facilitated by Paul Horton, Future
Water Association



Challenge 3

Customer Perception

Open Space

Facilitated by Jeremy Galpin
and Adrian Rees



Challenge 4

Data Challenges and Opportunities

Room 15

Facilitated by Mike Hull and Steve
Salvin, Aiimi



Challenge 5

Water Innovation Strategy

Room 16

Facilitated by Carly Perry, Spring



Water Sector's coordinated action

Workshop plenary

1. Challenge 1: River Health
2. Challenge 2: Future Talent
3. Challenge 3: Customer Perception
4. Challenge 4: Data Challenges and Opportunities
5. Challenge 5: Water Innovation Strategy

Water Sector's coordinated action

Validation of Commitments

1. Statement of Intent
2. Affiliation to Water innovation Strategy and to review and update in 2024
3. Incorporate collective response to challenges to a joint Business Planning by Dec 2023
4. Promote UK Expertise Internationally



Water Sector's coordinated action

Signing of Statement of Intent



Collaborating for the UK Water Sector

Statement of Intent

The water sector of the UK is facing a range of challenges from the impacts of climate change, environmental concerns to regulatory and infrastructure issues. These challenges require better coordination across the whole of the water value chain to address issues such as the response to climate change, ageing infrastructure, water quality, pollution, customer expectation and population growth as well as the need to attract and retain talent.

Although, the sector is well served by a number of industry associations which serve the whole of the water value chain, the organisations below consider that they can be more effective through increased collaboration in order to best delineate the solutions to issues that face the sector and to agree and deliver what is required.

Areas of collaboration include:

- Thought Leadership;
- Research;
- Development;
- Innovation;
- Application.

Collaboration will take the form of the following:

1. Sharing of work programmes in order to explore areas of mutual interest.
2. Coordination on 'One Voice' statements in areas of common interest.
3. Participation in an annual joint 'water collaboration summit' to share knowledge and experience and to agree and deliver programs of work.
4. Explore opportunities to promote UK water expertise internationally.
5. Connecting resources and sharing knowledge to review, update and build upon the UK 2050 Water Innovation Strategy to ensure it remains current and valid.

This collaboration will help the UK water sector deliver a reliable supply of safe, clean water while protecting the environment and adapting to changing conditions.

Water Industry Summit

Reception

Thank you for joining us!

UK Water Partnership

Water Industry Summit

18 October 2023

Collaborating to respond to the challenges of the Water Sector

