

# Open Data Strategy

2025



  
**Pennon**

  
South West  
Water

  
Bournemouth  
Water

  
BRISTOL  
WATER

  
ses  
WATER

# Contents

Foreword by Martin Jones CIO Pennon Group	3
Introduction	4
What is Open Data?	5
Why is it Important?	6
Our Open Data Vision	6
Benefits of Open Data	7
Guiding Principles of Data Products	10
Working with the Industry	10
Open Data Framework	11
Open Data Triage Process and Value Framework	12
Our Progress and Alignment with Our Data Strategy Goals	12
Our Priorities and Ambitions	13
Our Open Data Roadmap	16
Appendix	17

# Foreword by Martin Jones CIO Pennon Group

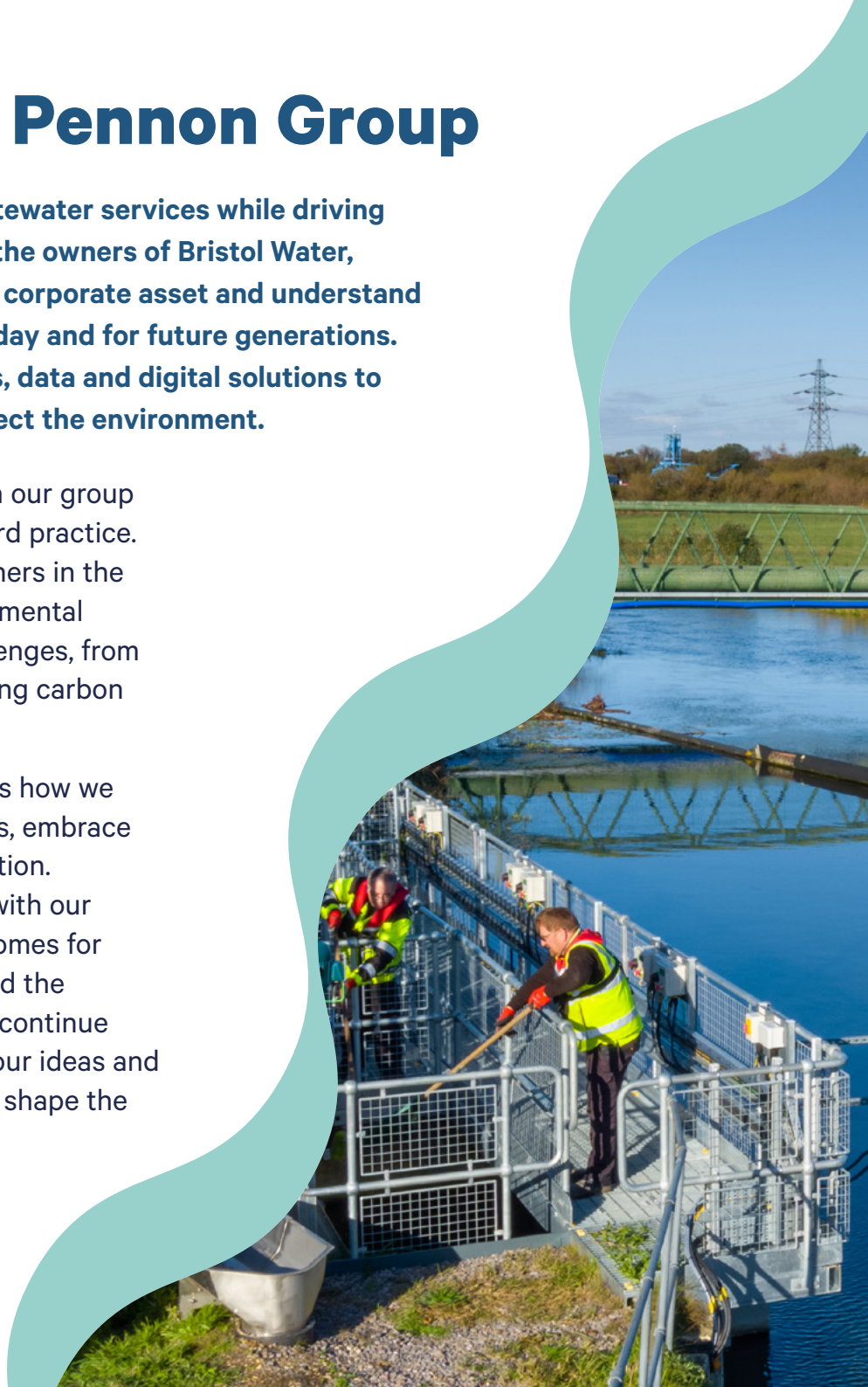
**At Pennon Group, we are committed to delivering high-quality water and wastewater services while driving positive outcomes for our customers, communities, and the environment. As the owners of Bristol Water, Bournemouth Water, South West Water, and SES Water, we consider data as a corporate asset and understand the vital role that data plays in delivering resilient and reliable services for today and for future generations. In our 2050 vision we set out our aim to expand our use of smart technologies, data and digital solutions to deliver operational excellence, provide better services to customers and protect the environment.**

Open data is a foundation of our strategy to innovate, collaborate, and improve transparency across our industry and our customers. By sharing data and insights, we can drive performance improvements, tackle industry-wide challenges, and create new opportunities for collaboration. Our participation in the cross-industry Stream initiative is a testament to this belief. Stream provides a shared platform for water companies to unlock value from their data, enabling us to work together to deliver better outcomes for customers and the environment.

However, open data is about more than technology—it is about culture. We are building an organisation where using data to drive decisions is second nature and

where collaboration, both within our group and across industries, is standard practice. We are proud to work with partners in the energy, agriculture, and environmental sectors to address shared challenges, from improving river health to reducing carbon emissions.

Our Open Data Strategy outlines how we will continue to push boundaries, embrace innovation, and foster collaboration. We believe that by being open with our data, we can create better outcomes for our customers, communities, and the environment. We are excited to continue this journey, and we welcome your ideas and insights as we work together to shape the future of our industry.



# Introduction

## Overview of the document's purpose and relevance

As part of Ofwat's Open data in the water industry: making the change - Ofwat Notice (June 2023), it has been recommended that all water companies develop an open data strategy and roadmap to make data more open and accessible to others. This strategy covers South West, Bournemouth, Bristol and SES Water to show our commitment to open and shared data in the water sector.

In this document we explain our approach and implementation plans for open data initiatives, how we plan to pursue our strategy and how we will manage risks related to data privacy, security, and misuse to ensure responsible and trusted data sharing.

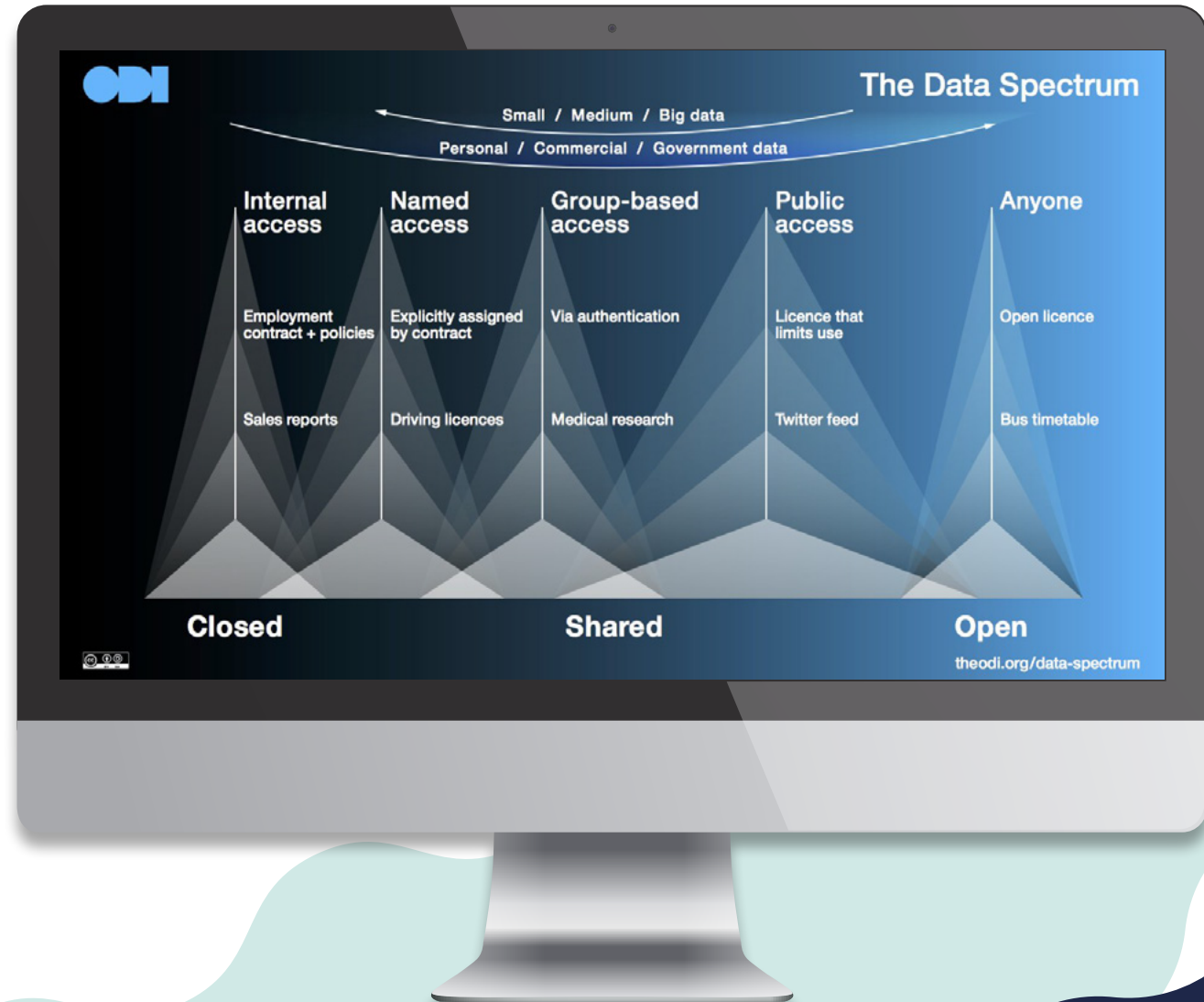




# What is Open Data?

**Open Data is data that's available to anyone to access, use and share. Data and information can be discovered and accessed by the public.<sup>1</sup>**

The data spectrum in the above diagram explains the levels of openness in data and what it means. We are aligning our definitions to the Open Data Institute definitions. Closed data describes data that will remain closed and not available to the public and is only accessible to authorised users. Such data would include, for instance, personal data or data related to critical infrastructure (for security reasons). Shared Data is data shared with specific groups or under specific conditions, such as Priority Service Register (PSR) data with Distribution Network Operator (DNO). This leads to open data that is available, accessible and usable by anyone. We will use the ODI framework to identify and prioritise use cases that will be released.



<sup>1</sup>Source – Open Data Institute

# Why is it Important?

Open Data is critically important in the water sector and for us. It helps to improve resource management, sustainability, and innovation in water resources. This provides opportunities and flexibility to reduce costs, deliver excellent customer service and improve customer outcomes and innovation.

## Our Open Data Vision

Our vision is to empower a sustainable future in the water industry through open, high-quality, and accessible data. By fostering transparency, collaboration, and innovation, we aim to drive smarter decisions that enhance environmental sustainability, operational efficiency, and customer outcomes.

This aligns closely with Stream's vision for open data. Therefore, as stated in Stream's **Water Open Data Strategy 2025** our vision will follow the same themes.

- We seek to publish with purpose.
- We seek to build trust and demonstrate trustworthiness.
- We seek to be highly engaged in stakeholder communication and collaboration.
- We seek to build an open culture alongside our data culture.
- We seek to create a future where open data is business as usual.







# Benefits of Open Data

## Transparency and Accountability

Open data plays a critical role in fostering transparency and accountability in water management. By providing access to information on water quality, usage, management practices, and performance, we empower our customers, communities, and stakeholders with the insights they need to understand how water resources are being managed and safeguarded. Open data allows our customers, community and stakeholders to use such information enabling the public and regulatory organisations to hold government agencies and utilities, including ourselves, accountable for performance and decision-making.

Sharing clear and reliable data enhances public confidence in our operations and decision-making. When people can see the facts for themselves, it strengthens our credibility and fosters trust between us, our customers, and stakeholders. Open access to water-related information helps individuals, businesses, and governments make informed decisions. For example, businesses may use water usage data to optimise consumption, while policymakers can assess trends to develop sustainable strategies. Publicly sharing performance

metrics, even controversial metrics such as combined sewer overflow operation allows us to showcase improvements, achievements, and efforts in water management. It demonstrates our commitment to continuous improvement and sustainable practices.

When data is open and accessible, it holds us responsible for meeting established standards and commitments. This ensures we prioritise environmental stewardship, efficient resource management, and customer satisfaction. Open data enables regulatory bodies to monitor compliance with environmental regulations and performance targets. This oversight ensures resources are managed responsibly and transparently. By promoting access to data, we give the public and advocacy groups the tools to hold organisations, including ourselves, accountable for decisions and actions that affect water resources and ecosystems. Accountability fosters a culture of responsibility and continuous improvement. Knowing that our performance is monitored adds an additional incentive to proactively address issues, adopt best practices, and strive for excellence in water and waste management.



# Benefits of Open Data

## Improved Water & Waste Management

Accurate and accessible data helps in better allocation of water resources, ensuring they are used efficiently and sustainably. Open data can be crucial during incidents and ensures that in times of emergency, we can manage and mitigate impacts on communities.

Open data serves as a vital tool for optimising water and waste management by ensuring accurate, accessible, and timely information is available to support decision-making, resource allocation, and emergency responses. It enables us to better understand patterns of water usage, availability, and demand. By analysing this data, water resources can be allocated more efficiently to balance supply and demand, prevent wastage, and ensure equitable distribution across households, businesses, and critical infrastructure. This allows for proactive planning, infrastructure investments, and policies that support long-term water sustainability. In waste management, data on waste production and treatment enables better planning for resource recovery and recycling processes, reducing environmental impacts.

Open data plays a pivotal role during incidents such as water contamination, flooding, drought, or infrastructure failures. Sharing accurate information enables us to prioritise support and allocate resources effectively during emergencies. Open data fosters long-term sustainability in water and waste management practices. By openly sharing data on water quality indicators, pollution levels, and waste treatment outcomes, we enable oversight by regulators, environmental organisations, and the public. This encourages adherence to standards and helps identify areas for improvement. Open data supports the tracking and management of wastewater flows, enabling the adoption of circular practices such as water recycling and energy recovery. This reduces water loss, pollution, and the burden on natural water sources. With climate change increasing the frequency of droughts and floods, open data helps forecast and prepare for extreme weather events. Sharing this information enables collective efforts to adapt and build resilience in water infrastructure and management practices.



# Benefits of Open Data

## Innovation and Research

Researchers and developers can use open data to create innovative solutions for water management, conservation, and distribution. It promotes research by fostering collaboration among academic institutions, private companies, and public agencies, leading to advancements in water technology and practices. Open data enables collaboration between utilities, governments, technology providers, and communities to address challenges in water and waste management. Data-sharing platforms create opportunities for researchers, startups, and technology companies to develop innovative solutions, such as smart monitoring systems, AI-driven leak detection, and advanced wastewater treatment technologies. Open data fosters transparency and inclusiveness, encouraging community involvement in conservation initiatives, water reuse programs, and waste reduction efforts.

Open data supports social responsibility by ensuring that our actions align with the needs of the communities we serve. With the right governance in place, data can be used responsibly to support social and environmental objectives. It enables us to align our actions with broader community needs, particularly in times of disruption or emergency, by identifying areas that require additional support. Transparency encourages partnerships across the community, industry, and government. By openly sharing data, we create opportunities for innovation and collaborative solutions to challenges such as climate impacts. While open data is one approach, it is not the only path to achieving these goals. We can, and already do, share data securely and purposefully without making it openly available. This ensures that innovation and collective problem-solving on issues can proceed without compromising data integrity or privacy.

Ofwat's paper H2Open - [\*\*Open Data in the water industry: a case for change\*\*](#) contains examples where the value of open and shared data has been demonstrated.



# Guiding Principles of Data Products

As part of Steam, we have been working with Open Data Institute (ODI) in establishing guiding principles. In 2016, the ['FAIR Guiding Principles for scientific data management and stewardship'](#) were published in Scientific Data. The authors intended to provide guidelines to improve the **F**indability, **A**ccessibility, **I**nteroperability, and **R**eusability of digital assets. FAIR data represents a best practice for data usability globally.

As part of the Water Sector Open Data Roadmap, the sector is keen to go beyond the FAIR Principles, to ensure that data being published

is both **O**pen and **E**thical. Therefore, the FAIR Principles have been expanded upon to the FAIROE Principles which all water companies will adhere to. At Pennon Group we would further expand and add **P**ermissioned.

Details of the Principles as per ODI Open Data principles can be found in the Appendix A.

## Working with the Industry

We are an active member of Stream and will continue to being an active member. This enables us to take part in workshops that facilitate discussion on priority datasets and also enables better collaboration with the industry in moving forward with the Open Data Roadmap.

As an active participant in the Stream sector initiative our Annual Performance Reports (APR) tables will also be published on the Stream portal, and we are expecting to use the statistics from the usage of our data and metrics to gain insights into data usage. Providing the user feedback loop should enable us to collaborate better with the user community. By analysing user engagement and feedback captured in

the APR, we hope to tailor future dataset releases to better meet user needs, drive innovation, and support informed decision-making.

We also published the Storm Overflow Discharge Monitoring Dataset that is designed to enable a national picture to be built of the operation of storm overflows in the UK. Each water and sewage company has provided the status of Event Duration Monitoring equipment used to detect discharges within an hour of the status changing along with information about recent discharges and their location. At a high level, we provide the NSOH with a data layer which is the information we display in the South West Water WaterFit Live Storm Overflow map.

# Open Data Framework

## Open Data Maturity model and themes

The Open Data maturity model is a way to assess how well we are publishing and consuming open data. The model is based around five themes as explained below from ODI.<sup>3</sup>

- **Data management processes** — identifies the key business processes that underpin data management and publication including quality control, publication workflows, and adoption of technical standards.
- **Knowledge & skills** — highlights the steps required to create a culture of open data within an organisation by identifying the knowledge sharing, training and learning required to embed an understanding of the benefits of open data.
- **Customer support & engagement** — addresses the need for an organisation to engage with both data sources and data re-users to provide sufficient support and feedback to make open data successful.
- **Investment & financial performance** — covers the need for organisations to have insight into the value of its datasets and the appropriate budgetary and financial oversight required to support their publication. In terms of data consumption, organisations will need to understand the costs and value associated with re-use of third-party datasets. Due diligence must also be carried out to assess the quality, provenance, and reliability of third-party data.
- **Strategic oversight** — highlights the need for an organisation to have a clear strategy around data sharing and re-use, and an identified leadership with responsibility and capacity to deliver that strategy.

We have assessed South West, Bournemouth, Bristol and SES Water in the group on open data maturity in order to support our roadmap.

---

<sup>3</sup> [Open Data Maturity Model | The ODI](#)



# Open Data Triage Process and Value Framework

Currently we are following Stream's [Open Data Triage](#) and [Value Framework](#) to publish our datasets. We plan to create a group-wide Open Data Triage and Value Framework that expands across the group, taking into account the different maturity levels in the companies.

## Our Progress and Alignment with Our Data Strategy Goals

Our open data strategy supports our broader data strategy by fostering trust, transparency, ownership, collaboration, and best practice across the water industry. It treats data as a corporate asset, ensuring efficient and effective use across teams and projects. We aim to integrate open data with existing initiatives rather than create separate workstreams, while still allowing flexibility for accelerated open data efforts when needed. We will still stay aligned with our business strategy as well as Stream's.



# Our Priorities and Ambitions

We are at an early stage in our open data strategy, similar to others in the sector. As we are part of Stream, our priorities are aligned with Stream's [Improving our data flows: an open data strategy](#).

## Priorities

- Publishing data to support use cases that are high value to our customers.
- Supporting collaborative data initiatives.
- Aligning our strategic approaches to open data and data sharing.
- Embedding, defining and sharing best practices within and across industries.
- Improving data literacy within our organisations.
- Maturing our internal processes to better support Open Data activities.



# Our Priorities and Ambitions

## Forward-Looking Ambitions

Taking part in open data initiatives enables us to use data in different ways. Benefits of open data involves making data accessible, usable and valuable. Our forward-looking ambitions align with Stream's commitments to open data:

### **1. Publish appropriate data that is valuable for our customers, society and the environment.**

As a group we are aiming to meet all deadlines set by Stream to publish datasets. SES has already taken the lead and published eight datasets since January 2024.

### **2. Set out individual release schedules or roadmaps for data publishing.**

We are following the release schedules set by Stream for data publishing for some companies within the group and aim to bring everyone to the same levels.

### **3. Embed monitoring and evaluation key performance indicators (KPIs) across common metrics.**

We are monitoring and evaluating published usage of the data that is provided by Stream platform. Using these metrics, we plan our communications on publication to engage with our users.

### **4. Collaborate across the sector on open data priorities.**

We attend, participate and contribute to open data initiatives across the sector to have input into the priorities for the sector. As well as attending events organised by Stream.





# Our Priorities and Ambitions

## 5. Collaborate openly beyond data with information, insights and best practices.

We are collaborating with others in the sector to share best practice in proactively publishing data.

## 6. Support the Stream initiative, either as full members, or as supportive stakeholders.

We are full members of Stream and committed to be part of Stream for the next year.

## 7. Upskill our teams on open data and other relevant forms of data literacy.

We have data engineers trained and able to use the Stream data platform to publish datasets. We also provide internal training on data literacy and will enhance the training to include open data.

## 8. Collaborate beyond the water sector on open data to drive additional value to our customers, society and the environment.

National Storm Overflow Hub: Developed by Water UK in partnership with Stream, this hub provides open access to real-time data on storm overflow activity across England. It enables environmental groups, researchers, and the public to monitor pollution events and advocate for better water quality and infrastructure investment.

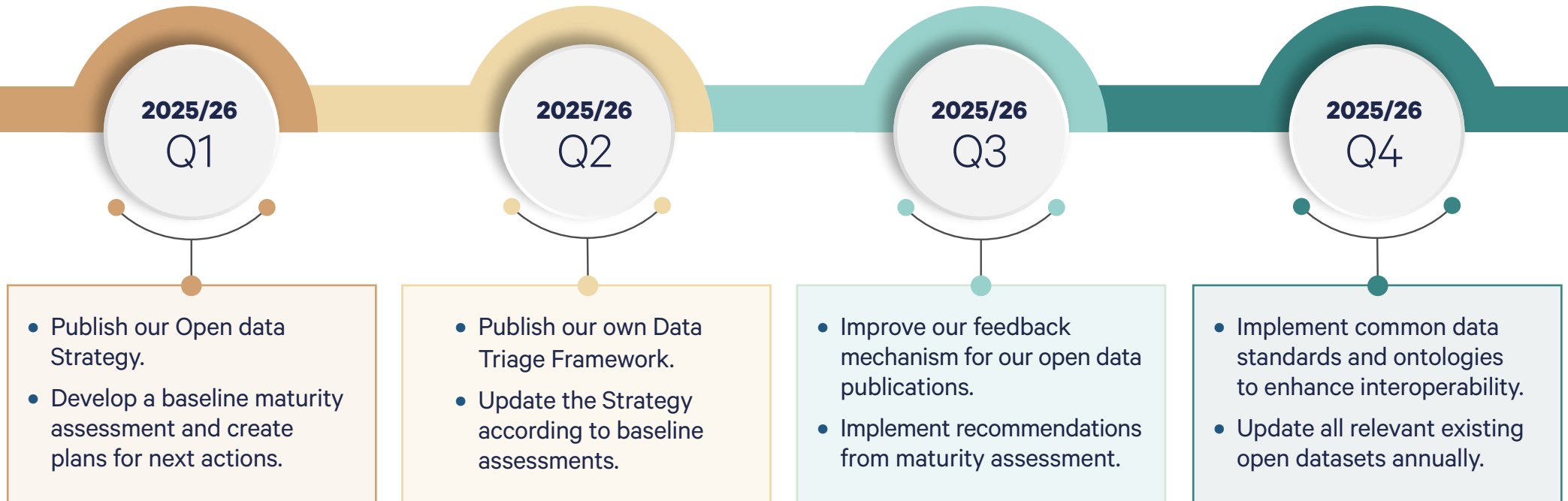
## 9. Be responsible open data users and innovators ourselves.

In the future, we will enable data that augments datasets. This innovation will increase our ability to gain insights from our data. We will use open data to address social and environmental challenges such as climate change.



# Our Open Data Roadmap

Our open data roadmap will be closely aligned with Stream. We would like to enhance what we have been able to deliver through Stream in the next year.



## 2025/26

Publish datasets as per Stream's Roadmap and follow Stream's recommendations. - **Roadmaps & Backlogs | Stream - Portal**

Contribute to Stream's initiatives such as the Technical Advisory group and User Advisory groups.

Support other members with knowledge share sessions when needed as part of Stream.

Contribute and take part in best practices and capability building sessions to strengthen the data ecosystem as part of Stream.

# Appendix

The following steps are taken directly from the FAIR Principles, while ‘Open’ aligns with [The Open Definition](#) from the Open Knowledge Foundation and [World Wide Web Consortium \(W3C\) standards](#), and ‘Ethical’ aligns with best practice from the Open Data Institute (ODI):

## Principles as per ODI Open Data principles<sup>5</sup>

### Findable

To use data, it must first be found. Metadata and data should be easy to find for both humans and computers. Machine-readable metadata are essential for automatic discovery of datasets and services.

- F1. Data is assigned a globally unique and persistent identifier.
- F2. Data is described with rich metadata.
- F3. Metadata clearly and explicitly include the identifier of the data they describe.
- F4. Data is registered or indexed in a searchable resource.

### Accessible

Once the user finds the required data, they need to know how it can be accessed.

- A1. Data is retrievable by their identifier using a standardised communications protocol.
  - A1.1 The protocol is open, free, and universally implementable.
  - A1.2 The protocol allows for an authentication and authorisation procedure, where necessary.
- A2. Metadata is accessible, even when the data are no longer available.

<sup>5</sup> [ODI](#).



# Appendix

## Interoperable

Data is more valuable when combined with other data. In addition, the data needs to interoperate with applications or workflows for analysis, storage, and processing.

- I1. Data uses a formal, accessible, shared, and broadly applicable language for knowledge representation.
- I2. Data uses vocabularies that follow FAIR principles.
- I3. Data includes qualified references to other data.

## Reusable

The ultimate goal of **FAIR** is to optimise the reuse of data. To achieve this, metadata and data should be well-described so that they can be replicated and/ or combined in different settings.

- R1. Data is richly described with a plurality of accurate and relevant attributes.
  - R1.1. Data is released with a clear and accessible data usage licence.
  - R1.2. Data is associated with detailed provenance.
  - R1.3. Data meets domain-relevant community standards.

# Appendix

## Open

Data will be published according to the ODI open data definition - to be accessed, used and shared by anyone, at a **three-star level of linked open data**:

- O1. Data is published on the web under a licence conformant with the open definition.
- O2. Data is published as machine-readable structured data.
- O3. Data is published in a non-proprietary format.

## Ethical

The positive and negative impact of collecting, using and sharing data, and relevant mitigations, will be assessed throughout all stages of the data lifecycle, with findings transparently and openly published.

- E1. Data is published alongside a risk register that captures the risks and mitigations of publishing the dataset.
- E2. Mitigations against risks are clearly implemented, and proof of this is easily accessible to data users.

Pennon Group plc, Registered in  
England No 2366640

Registered Office: Peninsula House,  
Rydon Lane, Exeter, EX2 7HR



  
**Pennon**

  
South West  
Water

  
Bournemouth  
Water

  
BRISTOL  
WATER

 **ses**  
WATER