

# Uisce Éireann's Bioresources Management

Aoife Kyne 22/05/2025



## Our Vision

**A sustainable Ireland where water is respected and protected, for the planet and all the lives it supports**

## Our Purpose

**We rise to the challenge of delivering transformative water services that enable communities to thrive**

## Customers



Domestic

1.66 m



Non-Domestic

174,654

## Treatment Plants



Water

696 (-2)



Wastewater

1,071 (+3)

## Pumping Stations



Water

1,784



Wastewater

2,288

## Water Source



Abstractions

1,068



Reservoirs

1,355

## Litres of Treated Water per Day



Water

1.7 bn



Wastewater

1.26 bn

## Length of Network



Water

65,070 km



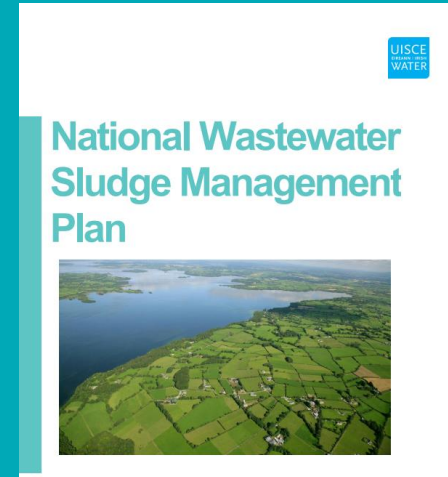
Sewer

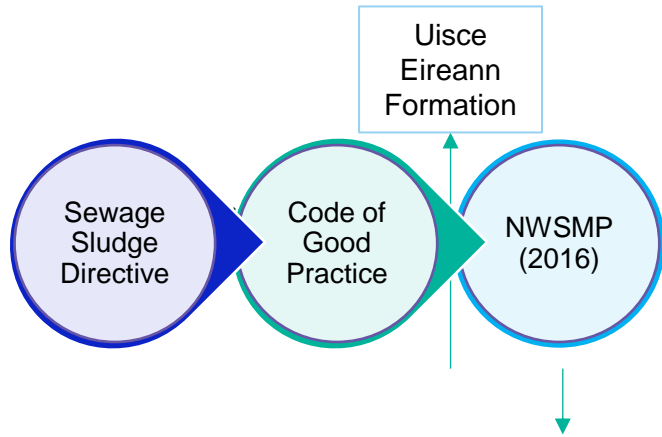
26,000 km

# Our policy, funding and regulatory framework shapes our investment plans and delivery programmes



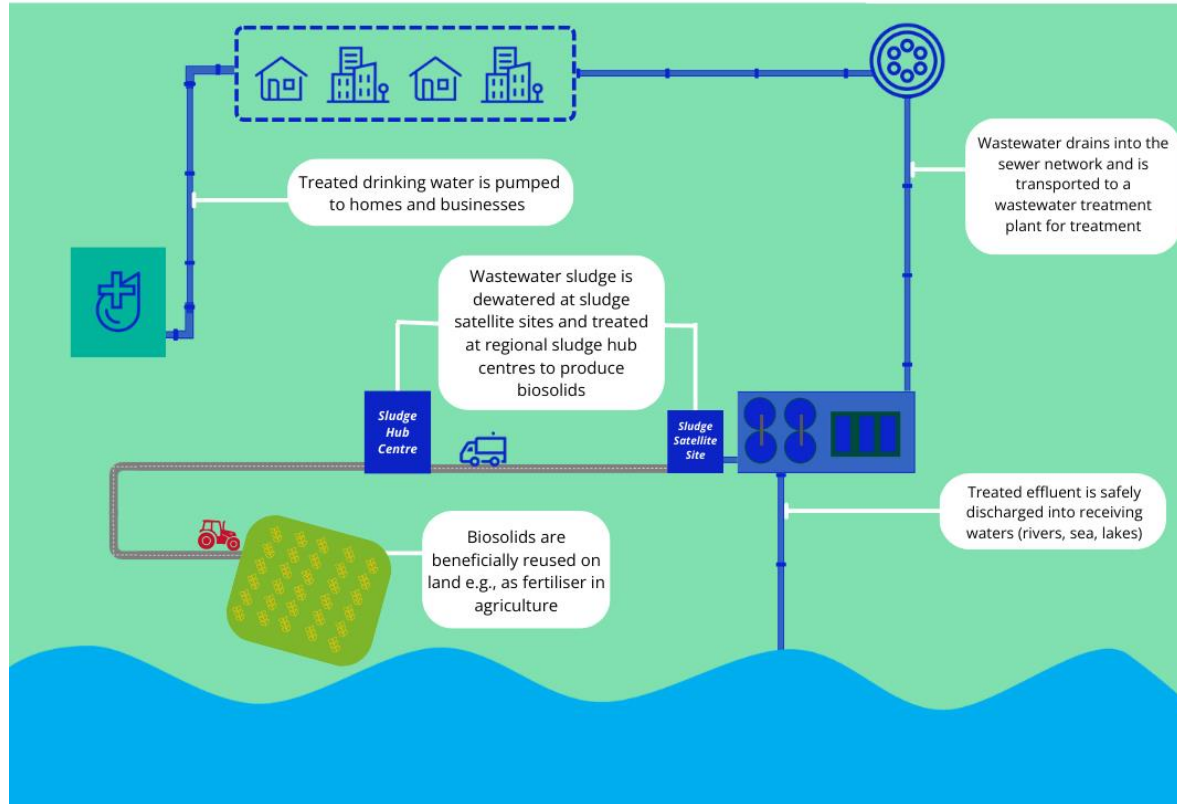
# National Wastewater Sludge Management Plan (2016)





## National Wastewater Sludge Management Plan

How wastewater sludge is managed



## The National Wastewater Sludge Management Plan

September 2016

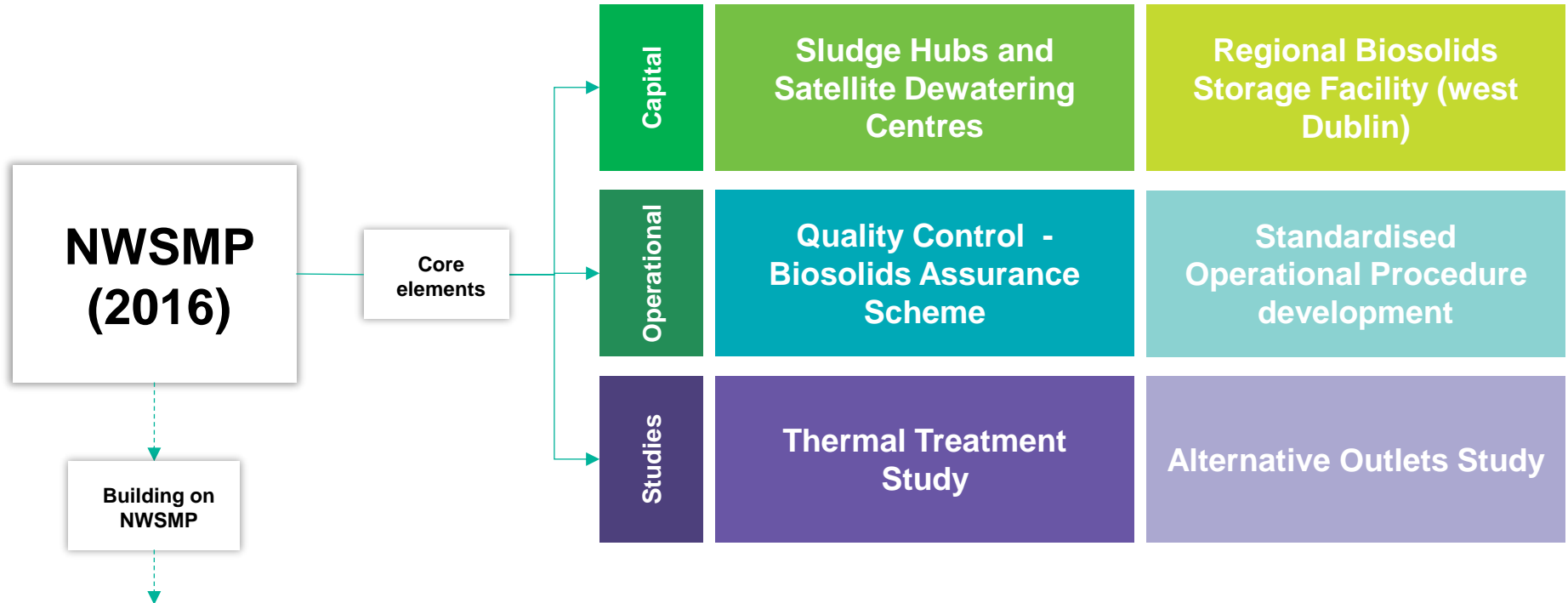


### What is the National Wastewater Sludge Management Plan?

Irish Water has published a long-term National Wastewater Sludge Management Plan (referred to as the NWSMP) that outlines its strategy to ensure a nationwide, standardised approach for managing wastewater sludge over the next 25 years.



# Core elements of the NWSMP



# Building on NWSMP – Phosphorus Recovery (Ringsend WWTP)

## Background and drivers

- Ringsend WWTP upgrade – bio P removal
- Significant P release under anaerobic conditions in the sludge line
- Final effluent compliance risk
- Nuisance struvite risk

## Solution

- Engineered precipitation of struvite
- Recover phosphorus via struvite crystallisation
- Reduce phosphorus load on the water line

## Installation

- Ostara process selected following competition
- 11 tonnes of struvite (*'Crystal Green'*) generated per day
- Equates up to 1.4 tonnes of phosphorus per day
- Sustainable recovery of a finite resource

P-Fix Building Internals



View of P-Fix Building and MgO Storage Facility



Struvite Product



View of P-Fix Building



# Building on NWSMP – Sludge Drying Reed Beds

## Background and drivers

- High number of small WWTPs
- Cost and impact of sludge movements
- Costs of dewatering and treatment

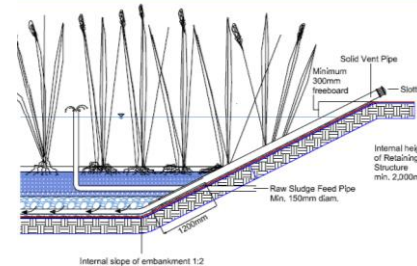
## Solution

- Low technology on-site treatment
- Reduce transport and treatment costs and impacts
- Reduce carbon footprint
- Biodiversity net-gain

## Installation

- 5 pilot sites developed in 2019 in Co. Carlow
- Now standard consideration across all small WWTP upgrade projects
- Multiple live projects progressing of varying scale (13 no.) – Enfield WWTP most recent example completed (6,500 PE)

### Designs



### Installation



### Reed growth



### Footprint



# Plan review and strategy development



# Reviewing where we are today ...

Taking stock of progress made

Move to:

## National Bioresources Strategy

Significant progress on key measures to address the management of wastewater sludge and bioresources in Ireland since adoption of NWSMP in 2016



We implemented an **online reporting traceability system** and continue to carry out auditing of third-party sludge framework contractors.



We are now using sustainable and circular nature-based solutions for sludge management such as **Sludge Drying Reed Beds**



We have installed a **Phosphorus Recovery Facility** in Ringsend WWTP



We have developed a national **Bioresources Model** to support operational and investment decision making

We have completed the following to inform decision making:

- ✓ Thermal Drying study
- ✓ Biomethane to grid study
- ✓ Circular economy outlets study
- ✓ Co-digestion study (food waste)
- ✓ Legislative review
- ✓ Technical Specifications development

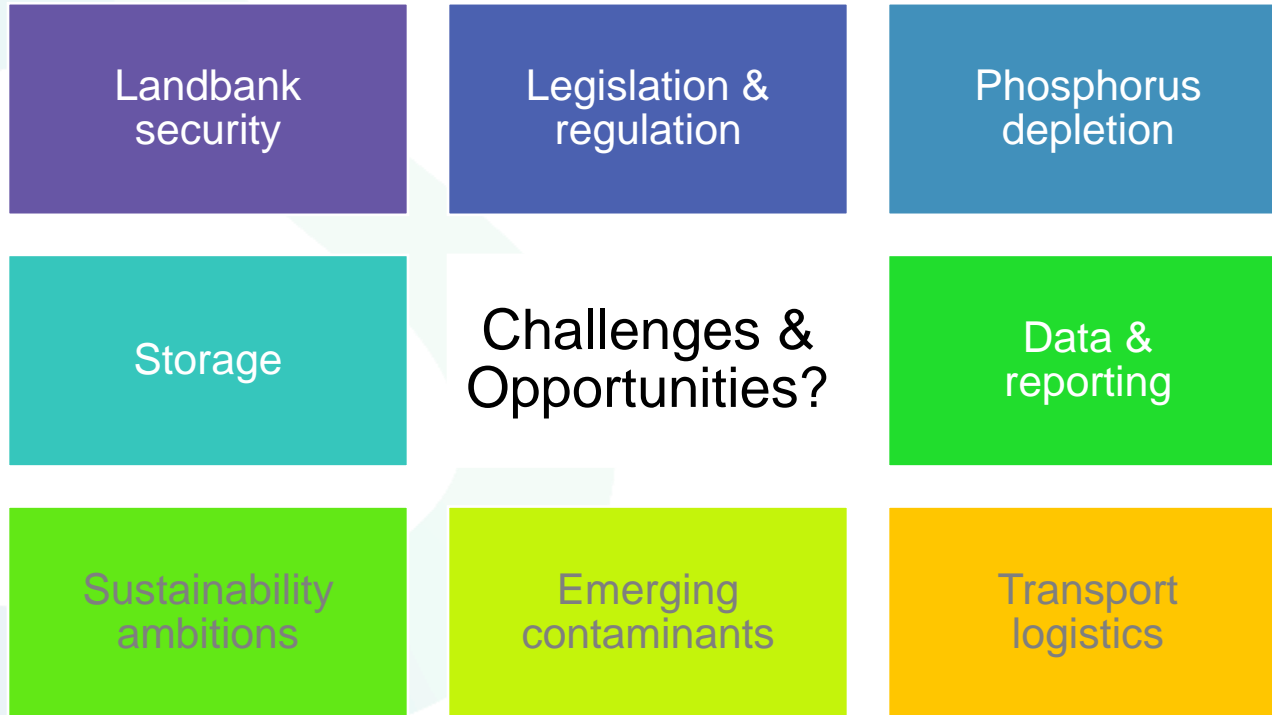


We continue to participate in relevant **National and European Working Groups** and **Research Projects** e.g. the EurEau 2 Sludge Task Force.

We are progressing **5** Regional Bioresources Centres nationally and **5** Satellite Dewatering Centres (SDCs) with a further **3** SDCs in development.

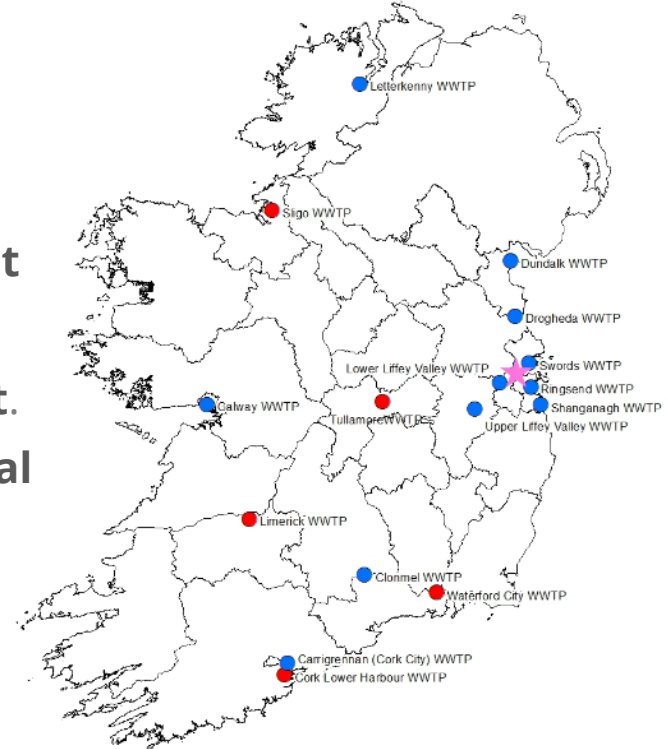


# Looking forward – Challenges and opportunities



## National Bioresources Strategy Vision

"Through the principles of a **circular economy** and the generation of **renewable energy**, we strive to create a **sustainable & resilient** system. We aim to complete our **centralised processing** model to optimise **bioresource recovery** and minimise **environmental impact**. By incorporating **nature-based solutions** and **advanced thermal conversion** technologies, we aim to enhance our **environmental management**, drive **operational efficiency** and align with our **sustainability ambitions.**"



# Thank you

Uisce  
Éireann  
Irish Water 