Uisce Éireann
Irish Water

Limerick Wastewater Treatment Plant Upgrade and Regional Bioresource Centre

Introduction

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Project Background

- **Limerick Wastewater Treatment Plant** (WWTP) has been providing service to the area since the **early 2000s**.
- **Uisce Éireann** has identified that an upgrade to the Limerick Wastewater Treatment Plant is **vital** to support existing and future development in the area.
- The proposed project aims to increase capacity from **130,000 to 285,000 Population Equivalent (PE)** with provision for expansion to 325,000 PE.
- Limerick WWTP **Sludge Hub Centre** began operating in 2003, treating sludge including sludges from Limerick and surrounding areas.
- **Sewage sludge is** the 'waste' by-product produced through treating municipal wastewater.
- **A bioresource** is any useful material or energy product recovered from wastewater sludge instead of disposing of it as waste. The upgraded Regional Bioresource Centre will produce:
  - **Biogas** – a renewable fuel (mainly methane) used for electricity, heat, or upgraded to biomethane.
  - **Class A Biosolids** – a nutrient-rich, treated solid material suitable for agricultural use or soil improvement.

Need for the Project

Wastewater Treatment Capacity

The Limerick Wastewater Treatment Plant is currently reaching capacity.

An upgrade is required to ensure wastewater is treated appropriately in line with environmental compliance, population growth and industry expansion.

Increased capacity will bring the plant in line with the Urban Wastewater Treatment Directive and conditions of the EPA Wastewater Discharge Licence.

Stormwater Storage Capacity

The existing stormwater storage tank at the **Wastewater Treatment Plant does not have sufficient capacity** to handle excess storm flows from the drainage network.

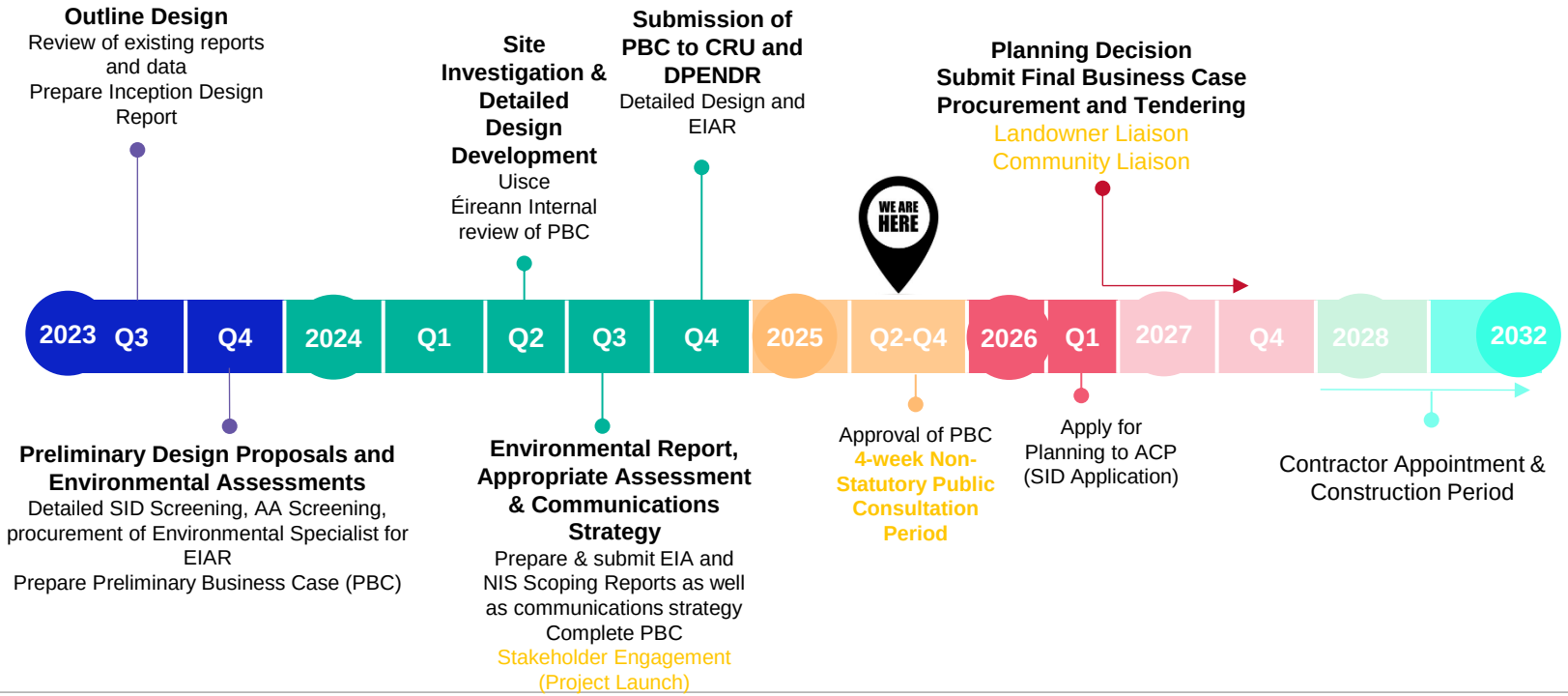
Additional stormwater storage capacity is needed to bring the wastewater treatment plant in line with 2024 Recast Urban Wastewater Treatment Directive (rUWWTD) and latest Uisce Éireann Technical Standards.

Regional Bioresource Centre

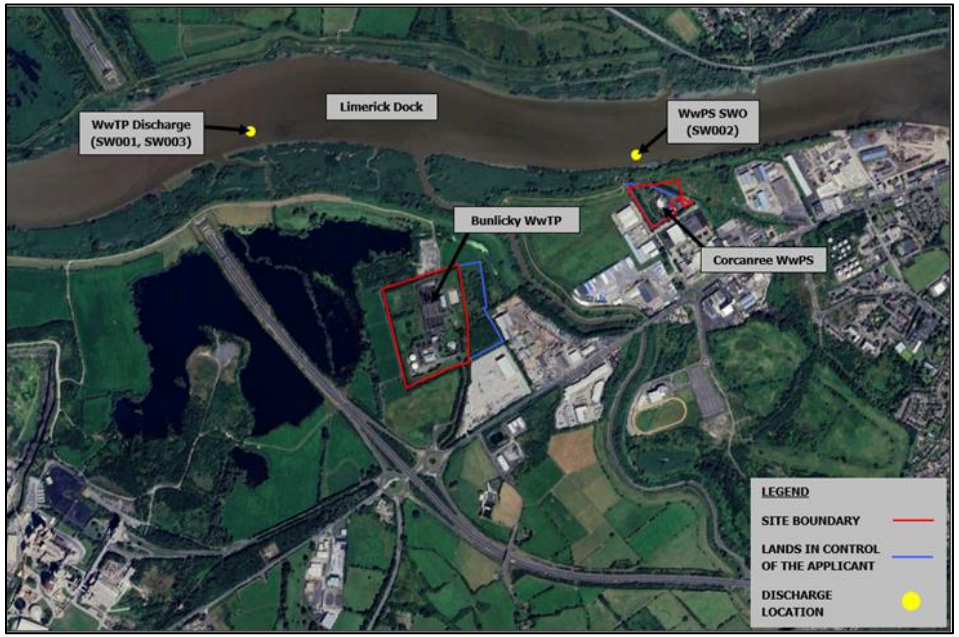
The Sludge Hub Centre was **upgraded in 2017** which included installation of Anaerobic Digestion (AD) facility.

The facility has now been selected as the preferred location for the development of a Bioresource Centre to serve the Southwest Region.

Timeline


Outline Design
Review of existing reports and data
Prepare Inception Design Report
Site Investigation & Detailed Design Development
Uisce Éireann Internal review of PBC
Submission of PBC to CRU and DPENDR
Detailed Design and EIAR
Planning Decision
Submit Final Business Case
Procurement and Tendering
Landowner Liaison
Community Liaison
WE ARE HERE
2023 Q3
Q4
2024
Q1
Q2
Q3
Q4
2025
Q2-Q4
2026
Q1
2027
Q4
2028
2032
Preliminary Design Proposals and Environmental Assessments
Detailed SID Screening, AA Screening, procurement of Environmental Specialist for EIAR
Prepare Preliminary Business Case (PBC)
Environmental Report, Appropriate Assessment & Communications Strategy
Prepare & submit EIA and NIS Scoping Reports as well as communications strategy
Complete PBC
Stakeholder Engagement (Project Launch)
Approval of PBC
4-week Non-Statutory Public Consultation Period
Apply for Planning to ACP (SID Application)
Contractor Appointment & Construction Period

Limerick Agglomeration and Surrounding Environment



- An **agglomeration** is an area where the population and economic activities are sufficiently concentrated for urban wastewater collection

- Limerick Wastewater Treatment Plant and Corcanree Main Lift Pumping station (MLPS) are situated on the banks of the **Shannon**, where the Lower River Shannon meets the Shannon Estuary.

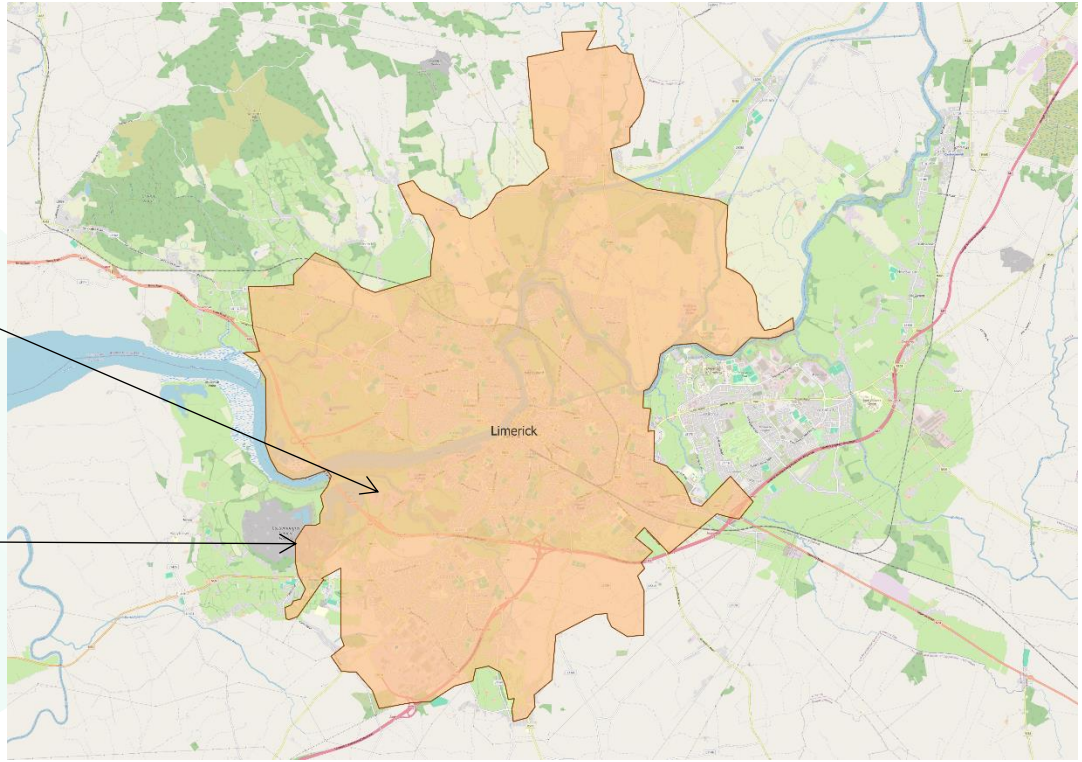
- Both WWTP and Corcanree MLPS are **~700m apart**, with Limerick Wastewater Treatment Plant located in Bunlicky, and the Pumping Station in Corcanree, with the respective townlands separated by Ballinacurra Creek.

- The Lower River Shannon SAC is a large site that stretches along the Shannon valley from Killaloe to Loop Head / Kerry Head, a distance of 120km. It is a **Special Area of Conservation (SAC)** and home to protected species including salmon, lamprey, otter and waterbirds.

Limerick City Agglomeration Area

Limerick Wastewater Treatment Plant located in Bunlicky

Agglomeration Area Boundary



Description of Existing Processes

The existing Limerick Wastewater Treatment Plant operates as a Conventional Activated Sludge (CAS) Plant, and the Regional Bioresouce Centre treats sludges, including sludges from smaller wastewater treatment plants in Co. Limerick with Anaerobic Digestion.

- **Preliminary Treatment:** Removal of large materials such as rags, plastics, grit, and sand from incoming wastewater.

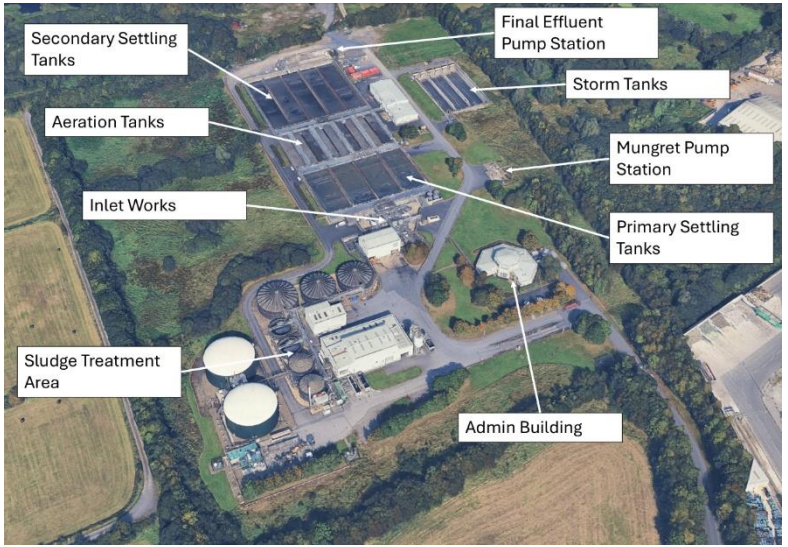
- **Primary Treatment:** Settling of solids using chemical assistance to separate heavier material from the water.

- **Secondary Treatment:** Biological treatment using air and bacteria to remove remaining pollutants, followed by settling of solids.

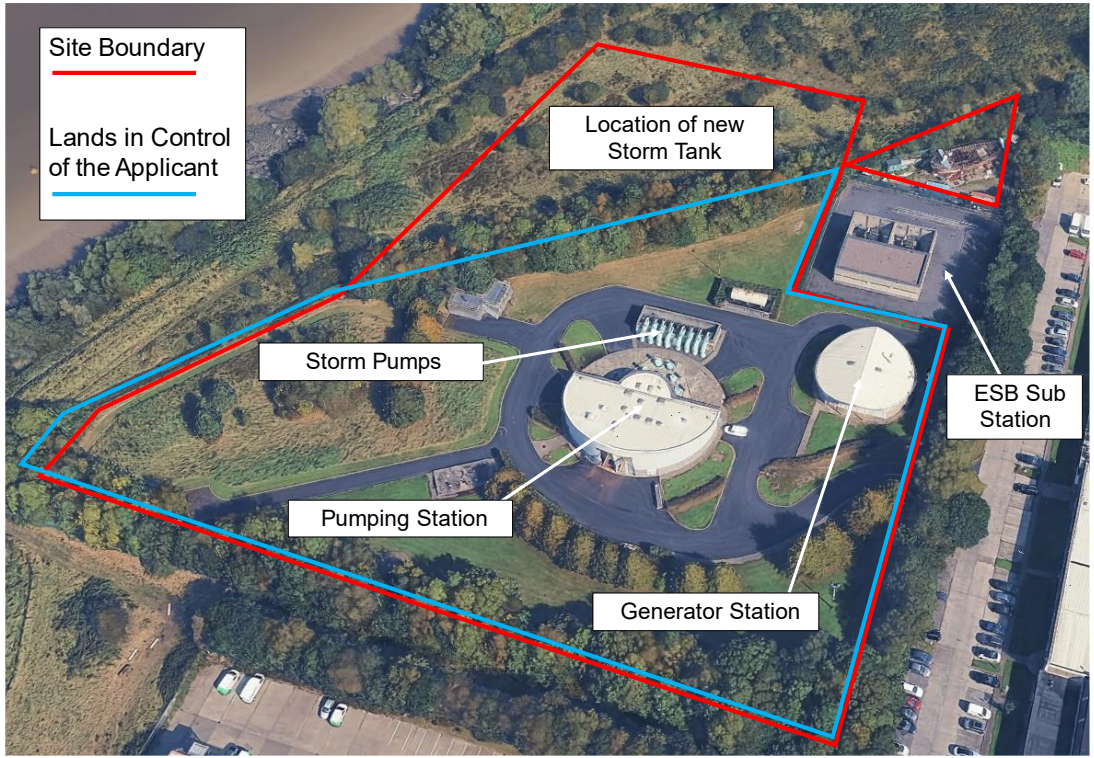
- **Nutrient Removal:** Reduction of nitrogen compounds using oxygen-free (anoxic) zones in the treatment tanks.

- **Sludge Treatment:** Stabilisation of sludge in digesters; water removed using centrifuges *Not Class A biosolids- must be lime treated before spread.

- **Stormwater Storage:** Temporary storage of excess water during heavy rainfall in a large storm tank with pump return and overflow.



Corcanree PS Existing Site Layout



The Objectives of the Project

Wastewater Treatment Capacity

The objective of the wastewater treatment plant capacity upgrade is to meet the +10-year growth projections **to meet growth projections for the facility** from the existing design capacity of **130,000 PE up to 285,000PE**.

The proposed upgrade will include **a new 157,000 PE process stream** to operate in parallel with the existing treatment process.

Stormwater Storage Capacity

The proposed upgrade works will provide **additional stormwater storage capacity** for the network with the construction of a new stormwater storage tank at Corcanree MLPS.

This will **reduce the number of untreated storm spills** to the Shannon Estuary, and it will bring the agglomeration into compliance with legislation.

Regional Bioresource Centre

Sludge will be treated with **advanced anaerobic digestion (ADD)** to become a 'Class A Biosolid', which is an organic recycled material that is biologically stable, free of contaminants and **safe** to re-use.

Biogas produced as part of the treatment process will be used as source of **renewable energy** and will reduce the impact of the WWTP on the national grid supply.

The Benefits of the Project

- Modernise and enhance the Limerick Wastewater Treatment Plant to meet current and future needs.
- Safeguard public health and protect the integrity of the local environment.
- Protect and improve water quality and support the unique conservation habitats of the Shannon Estuary.
- Maintain compliance with all national and EU environmental standards into the future.
- Improve efficiency and reduce operating costs for sludge treatment and transform wastewater sludge into a valuable, reusable bioresource.
- Generate renewable energy on-site to help power the facility and reduce its carbon footprint.

What's involved in the Wastewater Treatment Plant Capacity Upgrade?

The Wastewater Treatment Plant capacity upgrade will **extend the existing WWTP from 130,000PE to 285,000 PE**. Works requirements include the following:

- Construction of a new 157,000 PE inlet works and Aerobic granular sludge (AGS) process stream.
- Upgrade existing foul water pumps at Corcanree MLPS to increase pumping capacity to the WWTP.
- Diversion of a rising main from Corcanree MLPS to the new process stream.
- Retain existing Mungret pumping arrangement.
- Retain existing 1.1km outfall pipe to the Shannon Estuary.


SITE BOUNDARY OUTLINED IN RED
PROPOSED NEW AGS TANKS
PROPOSED NEW INLET WORKS
PROPOSED EXPORT CAKE SILO STORAGE
PROPOSED SLUDGE SCREENING
PROPOSED LTP BUFFER TANK
PROPOSED WAS, POLY DOSING, DIGESTED SLUDGE DEWATERING
PROPOSED LTP TANK
THICKENED SLUDGE STORAGE TANK (POST GBT PRE-THP THICKENING)
PRIMARY SLUDGE TANK
IMPORTED SLUDGE TANK
WAS BUFFER TANK (PRE GBT)
PROPOSED DIGESTER NO. 3
EXISTING TANKS TO BE USED AS DIGESTED SLUDGE TANKS
EXISTING TANKS TO BE USED AS DIGESTER FEED BLENDING TANKS
NEW ODOUR UNIT
NEW MCC
NEW CHP
PROPOSED GASBELL
EXISTING CAS TANK
EXISTING SBR TANK
EXISTING DIGESTOR
EXISTING DIGESTOR
PRE-THP DEWATERING & THP BLDG
PROPOSED IMPORTED CAKE RECEPTION AREA
EXISTING FINAL EFFLUENT PUMPING STATION
EXISTING STORM TANK
EXISTING BUILDING
EXISTING MUNGRET PUMPING STATION TO BE MODIFIED
EXISTING INLET WORKS
EXISTING ADMINISTRATION BUILDING AND SCADA ROOM
PROPOSED NEW HARDSTANDING AREA
PROPOSED VEHICLE PARKING AREA
EXISTING WEIGH BRIDGE
SITE ENTRANCE
PROPOSED PRE THP SILOS
NEW MCC

Marine Model Study

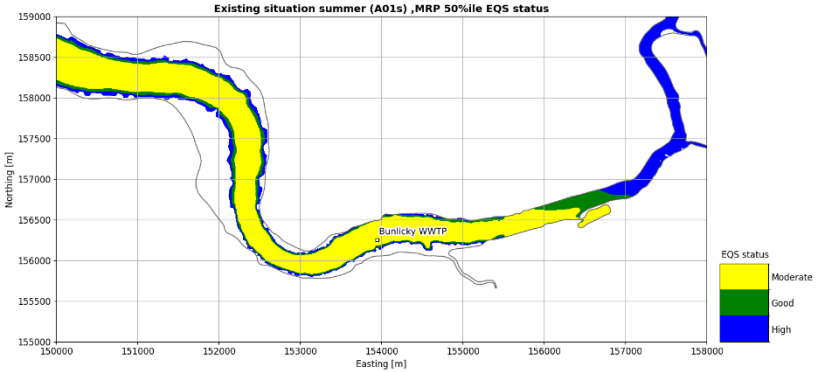
•**Objective:** To assess if the WWTP upgrade meets Environmental Quality Standards (EQS) in the Upper Shannon Estuary.

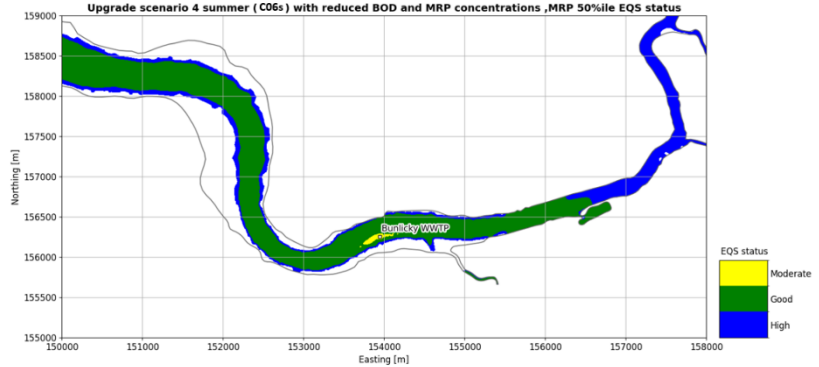
•**Method:** We followed national marine modelling and mixing zone guidelines using a **tiered approach (Tiers 0–3)** from simple screening to advanced 3D modelling.

•**Model Used: 3D MIKE 3 model** by DHI to simulate hydrodynamics and water quality.

•**Data Collection: 35-day survey** gathered data on tides, currents, salinity, temperature, and water quality.

•**Outcome:** Model calibrated and validated to assess baseline and future conditions, accounting for seasonal and cumulative impacts.



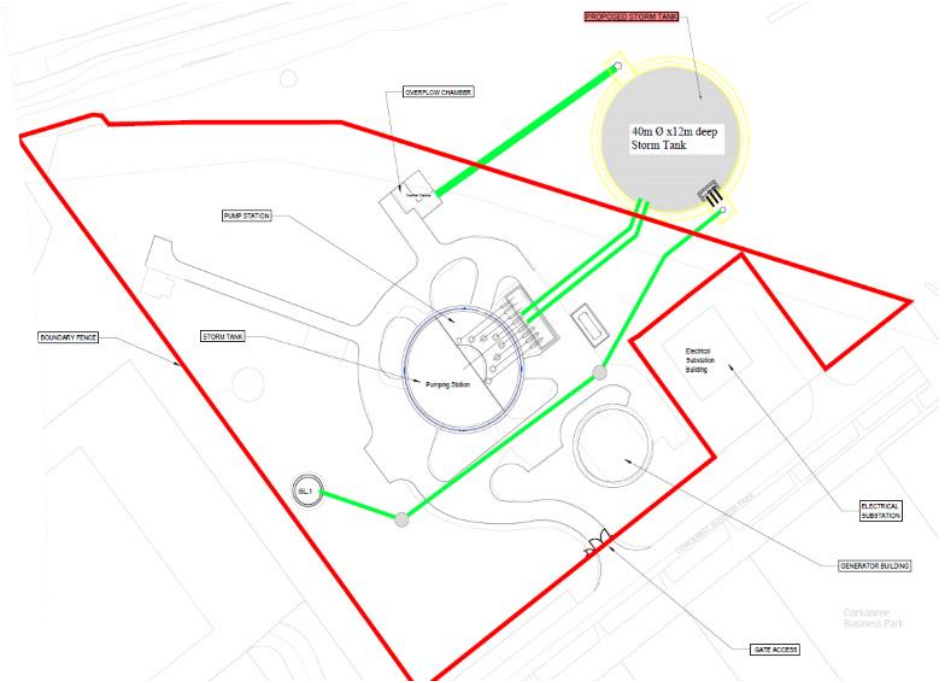


What's involved in the Stormwater Storage Capacity Upgrade?

- The proposed stormwater storage tank is a large piece of infrastructure that must cater for the long-term 25-year expansion.
- Total storage volume for the long term projected 325,000 PE in accordance with Urban Wastewater Treatment Directive (UWWTD) stormwater storage requirements.

Works requirements include the following:

- Development of a hydraulic model to determine spill rates and final tank sizing.
- Acquisition of lands adjacent to Corcanree MLPS.
- Construction of a new 12,500m^3 stormwater storage tank and associated pipework.



What's involved in the Regional Bioresource Centre?

The proposed Regional Bioresource Centre will be designed to treat sludge including sludges from other, smaller WWTPs in the Southern Region to the required Code of Good Practice standard for reuse of Biosolids in Agriculture, in alignment with the National Wastewater Sludge Management Plan (**NWSMP)**. Works requirements include the following:

- New **dewatered sludge cake** reception facility.
- New mechanical **thickening** system.
- New Thermal Hydrolysis Plant (**THP**).
- Refurbish existing **digester** feed tanks as pre-THP dewatering feed tanks.
- **Upgrade** mixing system & transfer pumps.
- New **odour control** system.
- New **dewatering** and **storage** installation
- New/additional **Anaerobic Digestion tank** (optional).
- **Biogas** storage bell (optional).
- New/ additional Combined **Heat and Power** Engine (CHP).
- New **digested sludge tank**.
- New **digested sludge dewatering** system.
- New **export Class A Biosolid storage** silo.
- New **liquor return treatment plant.**
- **Upgraded** wash water system with added **UV treatment**.

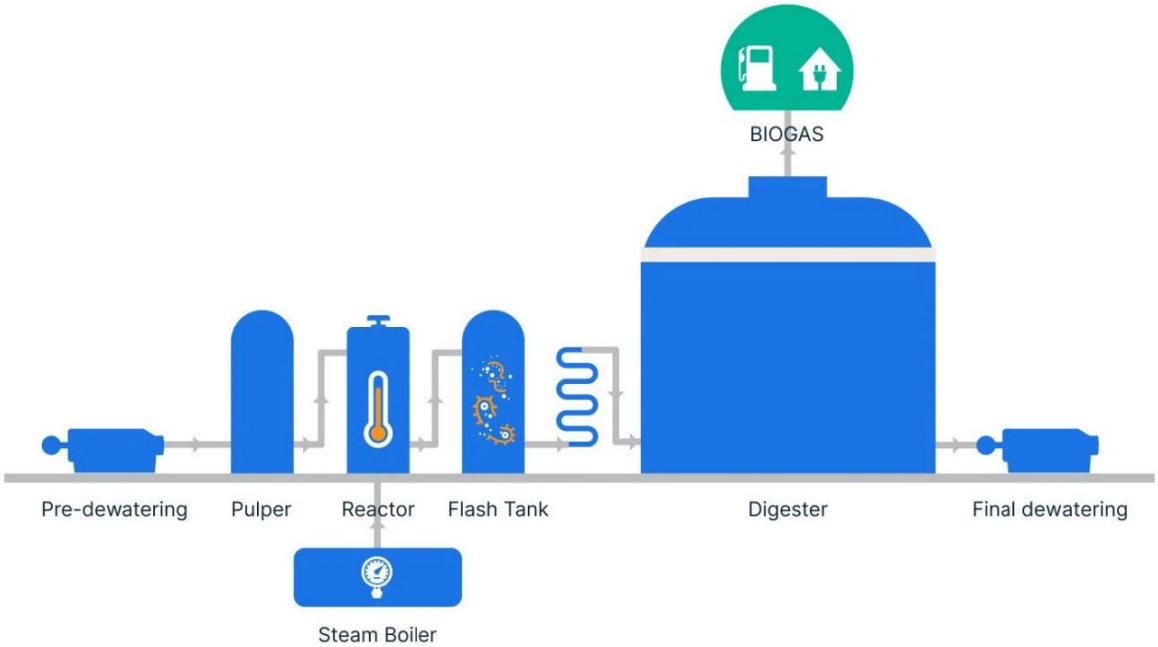
Regional Bioresource Centre Catchment Area

Cake Sludge Facility

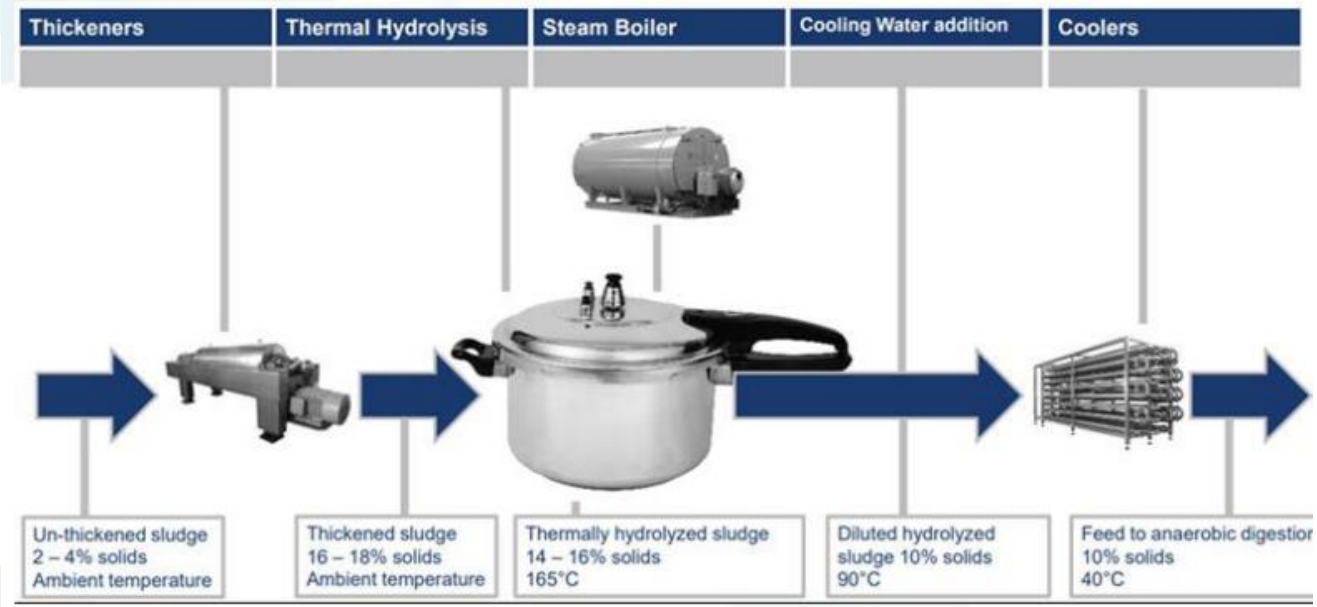
Liquid Sludge Facility

Regional Bioresource Centre

Advanced Anaerobic Digestion Process

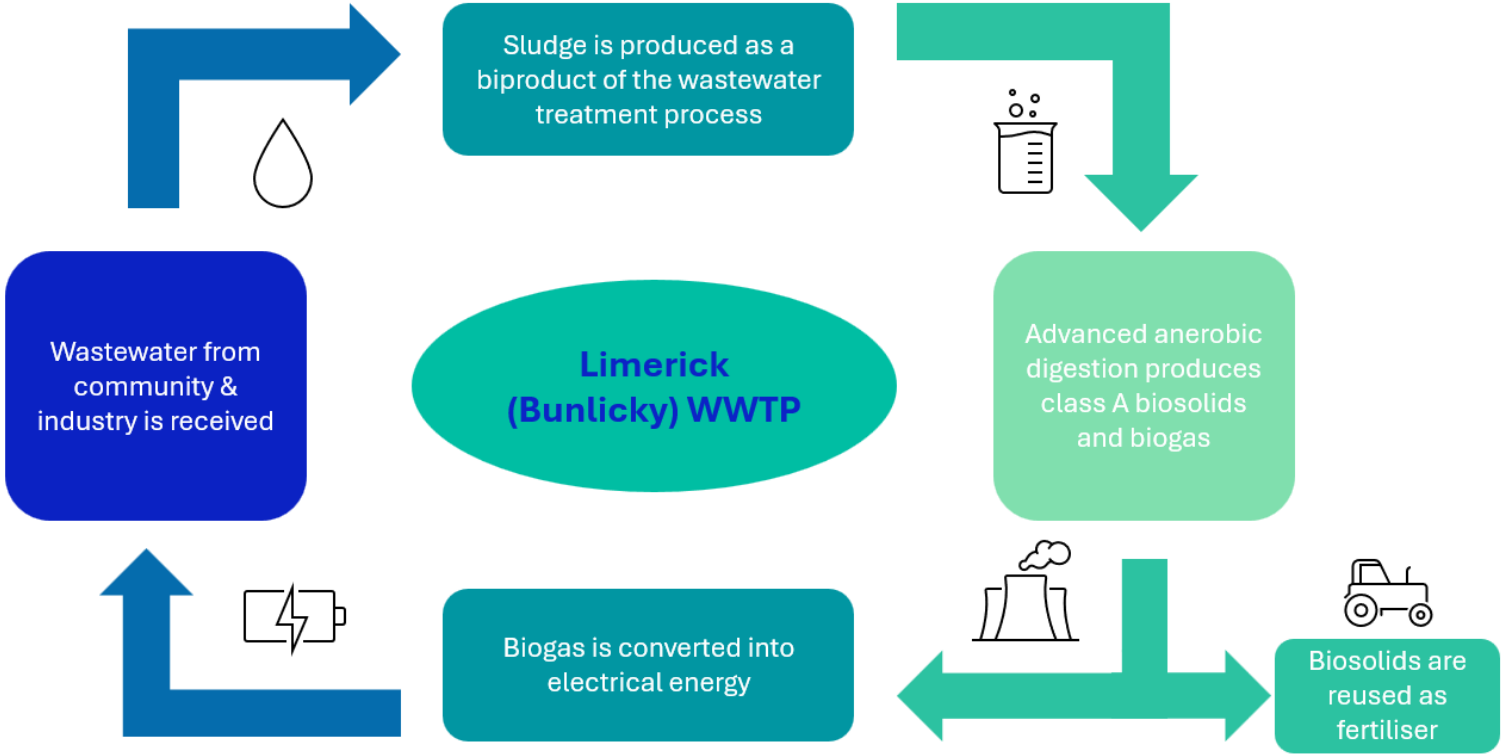


Thermal Hydrolysis Process



Thermal Hydrolysis Process

Gas Production & Circular Economy



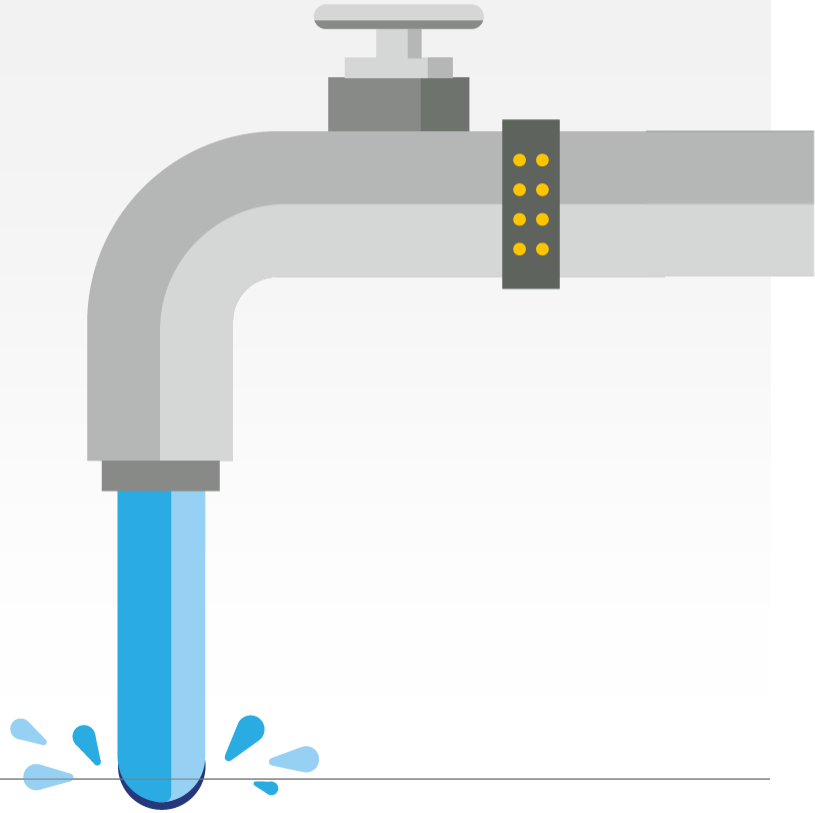
The Combined Processes

The combined process of **Aerobic Granular Sludge (AGS) with Thermal Hydrolysis Process** (**THP)** offers a high standard of both wastewater and sludge treatment as well as innovation, energy efficiency and whole life cost benefits. Works requirements include the following:

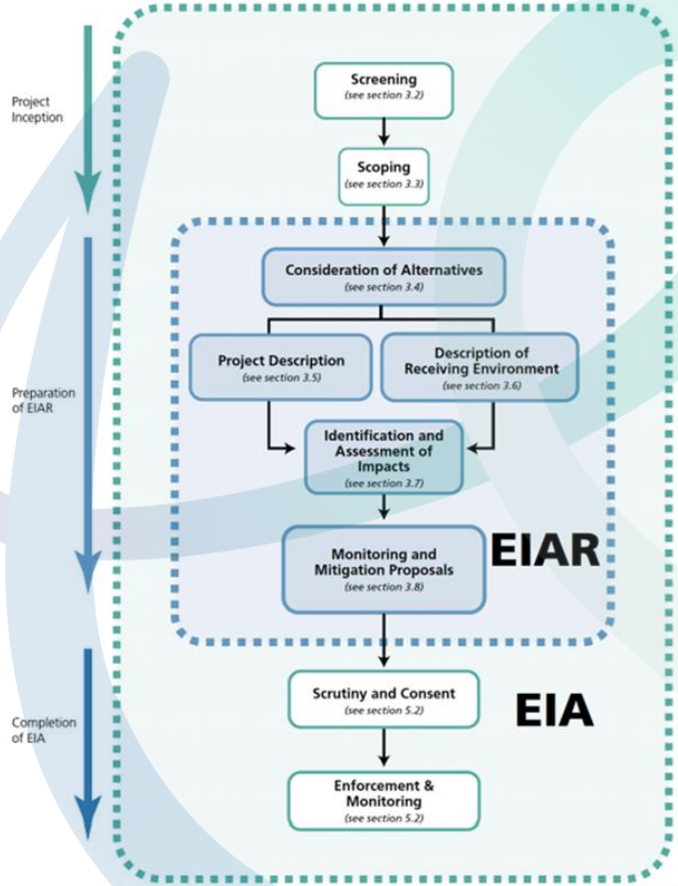
- a complete expansion of all elements of the existing sludge treatment centre at Limerick Wastewater Treatment Plant.

- introduction of a new liquor (the liquid portion of the treatment process that still contains some waste or microorganisms), treatment plant which will ensure the organic load impact of the regional bioresource centre does not impact Limerick Wastewater Treatment Plant.

This proposed combination will provide an upgraded wastewater treatment plant and Regional Bioresource Centre (RBC) with potential to **generate sufficient energy to cover the demands of both the Limerick Wastewater Treatment Plant and Regional Bioresource Centre.**



The Environmental Impact Assessment Process



What is Environmental Impact Assessment (EIA) ?

- Environmental Impact Assessment is the process of examining the anticipated environmental effects of a proposed project during construction and operational phases.
- An Environmental Impact Assessment Report (EIAR) is submitted with the planning application and evaluated by a competent authority.
- The proposed development, increasing capacity from 130,000 to 285,000 PE, falls under Classes 13 and 11(c) of the Planning and Development Regulations, triggering the need for an Environmental Impact Assessment Report (EIAR).

What stage of the EIA is Limerick Wastewater Treatment Plant at now?

- Specialist environmental sub-consultants are currently preparing detailed assessment chapters for the Environmental Impact Assessment Report (EIAR).
- Feedback from public consultation on the information Scoping Document will be taken into consideration in the detailed assessment.
- The Limerick Wastewater Treatment Plant Upgrade Project has currently finished Step 2 – Scoping.

The Environmental Impact Assessment Process

The Environmental Impact Assessment Report (EIAR) will adhere to the Environmental Protection Agencies' (EPA's) **"Guidelines on Information to be Contained in Environmental Impact Assessment Report, 2022".** It focuses on identifying environmental aspects **interacting** with the project, assessing potential **direct** or **indirect** effects.

The aspects of the environment to be **considered** and which are **currently being assessed,** are as follows:

- Population and Human Health;
- Biodiversity;
- Water Quality;
- Land and Soils and Hydrogeology;
- Air Quality and Climate;
- Odour;
- Noise and Vibration;
- Air and Climate;
- Traffic and Transport;
- Archaeology and Cultural Heritage;
- Waste Management;
- Material Assets;
- Landscape and Visual Amenity;
- Major Accidents and Natural Disasters; and
- Cumulative effects.

Appropriate Assessment

What is Appropriate Assessment (AA)?

- Appropriate Assessment establishes whether a project can be implemented without adversely affecting the integrity of a *Natura 2000* site– areas protected by Law with special conservation objectives.
- Findings of the Appropriate Assessment are compiled in a Natura Impact Statement (NIS) which is submitted with the planning application for evaluation.
- Screening concluded that Appropriate Assessment is required in respect of the proposed development at Limerick Wastewater Treatment Plant.

What stage of the Appropriate Assessment is Limerick Wastewater Treatment Plant at now?

The necessary environmental assessments have been carried out including;

- ✓Site walk over
- ✓Desk studies
- ✓Various Ecological surveys
- ✓Invasive species survey

- An Invasive Species Management Plan (ISMP) is being developed in accordance with Uisce Éireann guidelines.

Next Steps

• **Public consultation** is ongoing, including engagement with **statutory and non-statutory organisations**, to gather input from all interested parties at an early stage.

• An **Environmental Impact Assessment (EIA) is being carried out** for the proposed works at **Limerick Wastewater Treatment Plant, Bioresource Centre, and Corcanree Main Lift Pumping station.**

• As part of this process, **Uisce Éireann** will prepare a comprehensive **Environmental Impact Assessment Report (EIAR),** covering potential environmental impacts during both **construction and operational phases**.

•All **comments, observations, and submissions** received during consultation will be reviewed and considered in the EIAR.

• A **Consultation Report** summarising stakeholder feedback will also be prepared.

• The final **EIAR and Consultation Report** will be submitted to **An Coimisiún Pleanála** as part of the planning application.

•Submissions may be sent via email to: **limerickWWTP@water.ie**.

How can we get involved?

We are seeking feedback from stakeholders and members of the public on the proposed project.

This period of non-statutory consultation will last for four weeks from 03 November to 01 December 2025.

To make a submission please send it to us by e-mail, feedback form or post by 01 December 2025. Further information is available on www.water.ie/limerickwwtp

The project is indicative and subject to planning and statutory approvals

Do you live in, or own a home in Limerick or the surrounding area?

Do you work in, or operate a business in Limerick or the surrounding area?

What impact do you believe the Limerick Wastewater Treatment Plant Upgrade and Regional Bioresource Centre Project will have on Limerick and the surrounding area?

Do you have any additional comments, ideas, or suggestions about the project?

Thank you.

For further information or to get in contact please email **limerickWWTP@water.ie.**