# Appendix 2.4. Operational Waste Management Plan (OWMP)

AtkinsRéalis

# Outline Operational Waste Management Plan

Uisce Éireann

June 2026

5161805

# MORTARSTOWN WASTEWATER TREATMENT PLANT UPGRADE

# Notice

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This document has 36 pages including the cover.

## Document history

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## Client signoff

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# 1. Introduction

This Outline Operational Waste Management Plan (OWMP) has been prepared by AtkinsRéalis Ireland Ltd (AtkinsRéalis) on behalf of Uisce Éireann (the applicant) as part of the supporting documents required for a planning application for a proposed upgrade to Mortarstown Wastewater Treatment Plant, Co. Carlow.

Uisce Éireann is seeking permission from An Coimisiún Pleanála (ACP) for proposed development which includes the upgrade of existing Mortarstown Wastewater Treatment Plant (WwTP) and construction of a new pumping station at the treatment plant site which will replace the existing Kilkenny Road Pumping Station at Mortarstown, Co. Carlow.

The proposed project includes the installation of a new outfall pipe from the wastewater treatment plant (WwTP), along with a new microtunnelled gravity sewer extending from the former Kilkenny Road Pumping Station site to a new pumping station. The microtunnelled gravity sewer will run along Kilkenny Road for approximately 775 m, connecting the previous Kilkenny Road Pumping Station location to the new pumping station.

The principal objective of this Outline Operational WMP is to provide a framework for the provision of waste management facilities for the operational phase of the proposed development.

## 1.1 Aim of the Plan

The aim of this OWMP is to estimate the quantities and types of waste likely to be generated during the operational phase of the proposed development and to ensure that appropriate waste management measures are integrated into both the design and operation of the facility.

The OWMP outlines a strategy for managing operational waste in compliance with relevant legislation and best practice standards. Key implementation measures include waste prevention, segregation at source and adherence to the waste hierarchy with emphasis on reuse and recycle over disposal. The overarching goal is diverting waste from landfill and supporting the development sustainability objectives.

## 1.2 Project Description

### 1.2.1 Site Location

The Proposed Development is located in Mortarstown within the administrative area of Carlow County Council. The Site comprises approximately 10.766 hectares of predominantly developed land, currently used for the existing Mortarstown WwTP and associated infrastructure. The Proposed Development will include developing the vacant area to the west of the existing WwTP.

The existing Mortarstown WwTP is located on the southern side of Carlow town centre, located off Green Road, Mortarstown Upper, Co. Carlow, at approximate grid reference 52°49'09.2"N 6°56'19.1"W. The WwTP site is generally flat at ca.50m AOD. The WwTP is predominately bounded by agricultural land with a number of nearby sensitive receptors. The South East Technological University (SETU) is located to the north with Tyndall College further South; a grazing field, two existing dwellings and the Kilkenny Road (R448) to the West; and agricultural land, established residential properties and residential development under construction to the East. A strip just Northeast of WwTP has some Construction and Demolition (C&D) waste and a strip Northwest has horses and trailers. A vacant cottage purchased by UE is also situated to the west of field with livestock. The existing site comprises infrastructure and equipment and a mixture of grassed, concreted, hardcore and paved areas throughout.

The existing Pumping Station site north of the existing WwTP is bounded on the southern side by the Kilkenny Road (R448) and vegetation/trees; vegetation/trees and the River Barrow to the West; partially cleared vegetation/trees and the River Barrow to the North; and Kilkenny Road (R448), SETU and Carlow Institute of Technology and student accommodation to the East. The existing Pumping Station is located on the southern side of Carlow town centre, adjacent to the River Barrow (approximate grid reference 52°49'37.2"N 6°56'16.0"W). The Kilkenny Road Pumping Station site is generally level at ca. 47m AOD.

The route of the existing microtunnel between the existing Kilkenny Road PS and existing Mortarstown WwTP runs along Kilkenny Road. The outfall location is in close proximity to three residential houses, and the area is grassed with thick vegetation.

Figure 1-1 below illustrates the site location.

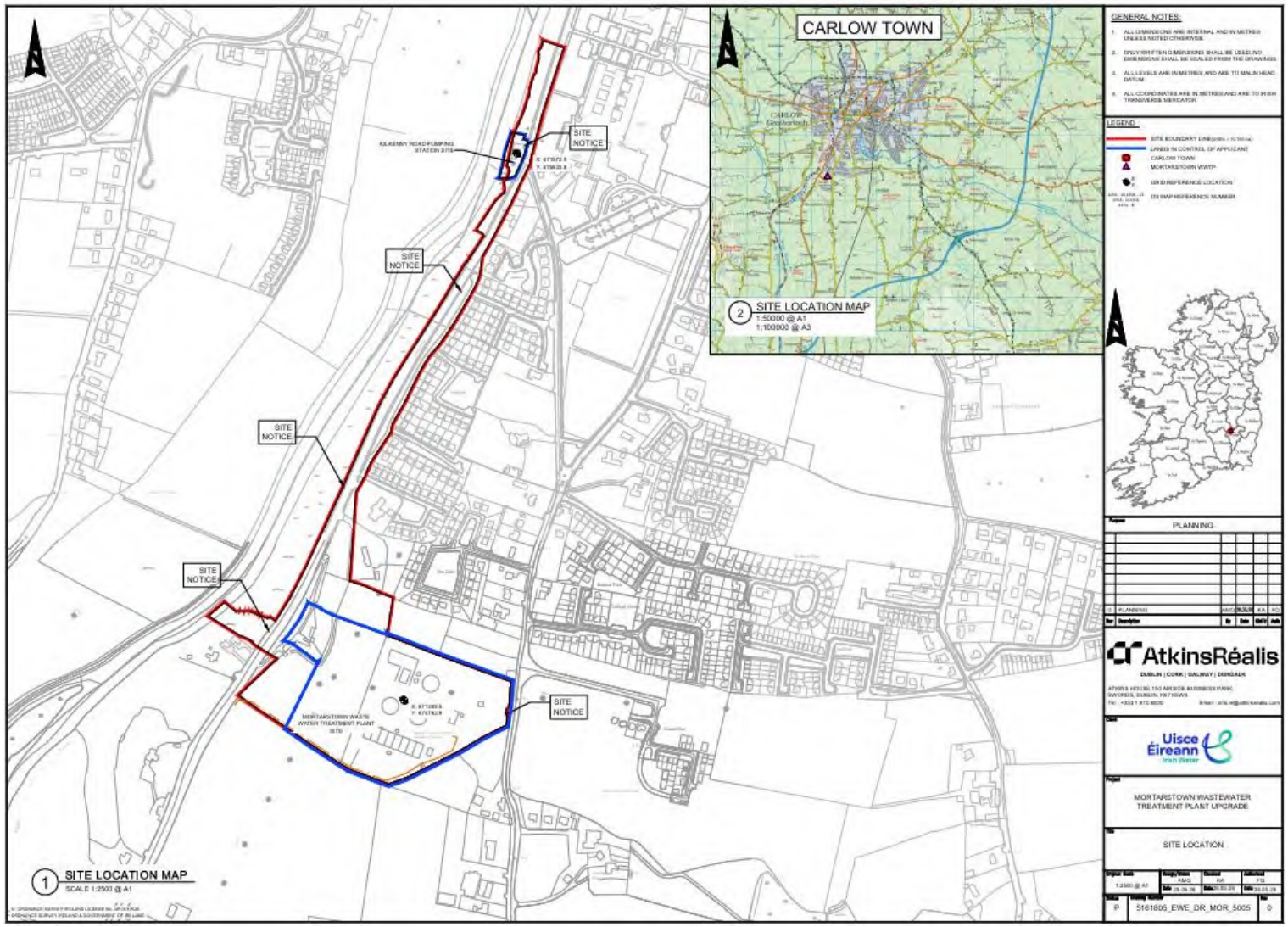


**Figure 1-1 - Site Location.**

### 1.2.2 Overview of the Proposed Development

The Proposed Development involves an increase of treatment capacity to 58,500 PE. The Proposed Development includes the expansion of the existing infrastructure associated with Mortarstown WwTP into the adjoining land to the west, which is within the plot accommodating the existing WwTP and property owned by UE. A new microtunnel gravity sewer from the existing Kilkenny Road Pumping Station to the new pumping station (adjacent to the proposed inlet works) will be constructed. A new outfall pipe from the proposed WwTP outfall chamber to the River Barrow will be constructed. The existing WwTP site is ca. 3.79 hectares (ha) and after completion of the upgrade works the Site will expand to ca. 5.53ha. The total Proposed Development area (Red line boundary) is ca. 10.766 ha in size. The Site location and proposed red-line boundary is presented in Figure 1-1.

The proposed microtunnel gravity sewer will run along Kilkenny Road and is 775m in length, which runs from the previous Kilkenny Road Pumping Station location to the new pumping station.

The upgrade works for the Mortarstown WwTP are listed as follows:

- Microtunnel Gravity Sewer
  - Ø1650mm internal diameter.
  - 755m long.
- New Pumping Station (PS)
  - The provision of 1 no. terminal pumping station.
  - The provision of 4 no. raw sewerage pumps inclusive of MEICA works.
  - The provision of 1 No. standby generator and associated fuel storage.
  - The provision of 1 no. odour control unit.
  - The provision of 1 no. flow meter chamber
- Mortarstown WwTP
  - Provision of foul pumping station for local agglomeration adjacent to existing inlet works (supplemented by standby generator).
  - Provision of a fuel storage tank and standby diesel generator to service the WwTP.
  - Provision of new inlet works to include fine screening, mechanically raked by-pass screen, screening compaction and conveyance to skips, grit removal, grit classification and conveyance to skips. The new inlet works will be provided with an odour treatment unit.
  - Provision of 2 no. stormwater storage tanks and 2 no. stormwater return pumps.
  - Existing final settlement tanks and associated Return Activated Sludge (RAS)/ Waste Activated Sludge (WAS) to be retained, cleaned and decommissioned.
  - Provision of 4 no. primary settlement tanks and scraper systems.
  - Provision of 4 no. primary sludge pumps.
  - Provision of 4 no. air blowers and modifications to existing air delivery pipework.
  - Provision of new air blower building.
  - Provision of new fine bubble diffused air system in existing aeration tanks.
  - Provision of 2 no. final settlement tanks with half-bridge scrapers.
  - Provision of new RAS/WAS pumping station and station fitted with 2 no. RAS pumps and 2 no. WAS pumps.
  - Structural refurbishment of picket fence tanks.
  - Mechanical and electrical refurbishment of existing picket fence thickener and conversion of second existing tank to a sludge blending tank.
  - Provision of 2 no. additional picket fence tank thickener.
  - Provision of 1 no. belt press, polymer prep unit and polymer dosing pumps.

- Provision of new pumped sludge transfer system.
- Provision of sludge import facility.
- Provision of minimum 6 no. odour control units
- Provision of 1 no. new outfall chamber and outfall pipe.
- Modifications to existing administration building.
- Provision of MEICA and SCADA upgrades.
- New storage shed and associated gantry.
- Demolition of existing inlet works structure.
- Demolition of existing storm tank.
- Demolition of existing Control building for the weigh bridge.
- Demolition of Various small chambers within the site.
- Demolition of Existing sludge cake transfer facility.
- Provision for PV solar panels.
- Existing service relocations (for commissioning of the proposed infrastructure).
- General civil site works.
- Diversion of existing ESB 38kv HV overhead lines and 10kV/20kV MV line on site.

The proposed upgrade of the WwTP and new pumping station will:

- Meet the requirements of the existing Wastewater Discharge Licence (WWDL) D0028-01;
- Meet Department of Environmental, Housing and Local Government Guidance and Urban Waste Water Treatment Directive criteria in relation to storm water storage and overflows;
- Alleviate current overloading of some process units; and,
- Provide additional capacity to treat future predicted catchment growth.

The lands on which the upgrades of the WwTP are proposed have been designated by Carlow County Council (CCC)1 as *'Utilities & Strategic Infrastructure'* zoning with the objective *'to provide for the needs of all transport users and other utility providers.'* The area to the north of the WwTP is not zoned. The area where the new outfall pipe is proposed is zoned as *'Amenity & Open Space'* zoning with the objective to *'To preserve, provide for and improve active and passive recreational public and private open space'* and a small portion zoned for *'Residential 1. Established'* zoning with the objective *'to protect and enhance the amenity of developed residential communities.'* The outfall pipe will be installed by a combination of micro tunnelling and open cut trench excavation methods.

The rising main will be laid along the existing Kilkenny Road, which is not zoned.

Lands within the wider vicinity of the site are also used for residential, commercial and industrial uses.

Refer to the full planning drawing pack submitted with the planning application.

The layout of the proposed development is presented in Figure 1-2 and Figure 1-3 below.

[1] Carlow County Council Development Plan 2022 – 2028 Layout

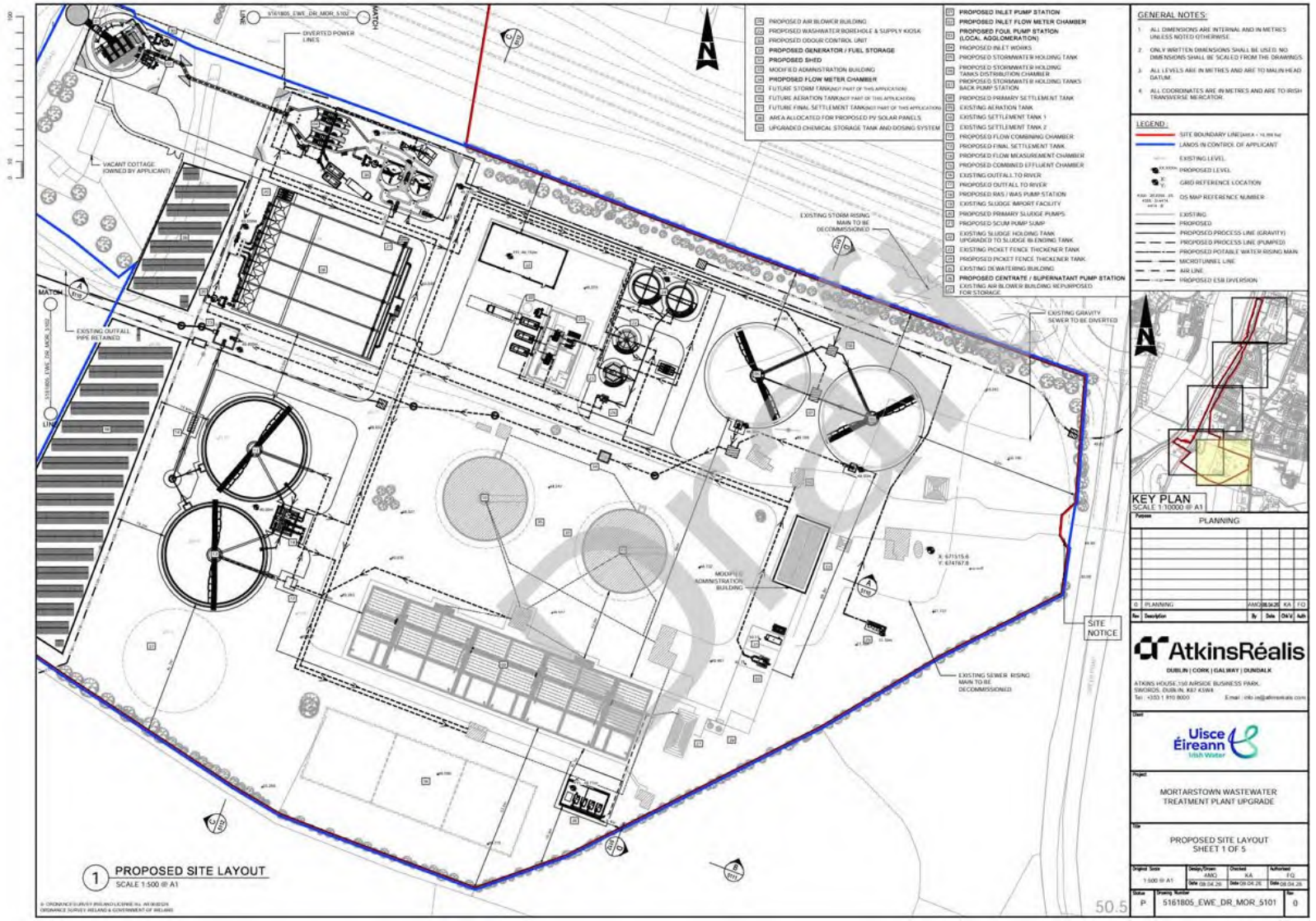


**Figure 1-2 - Proposed Site Layout**

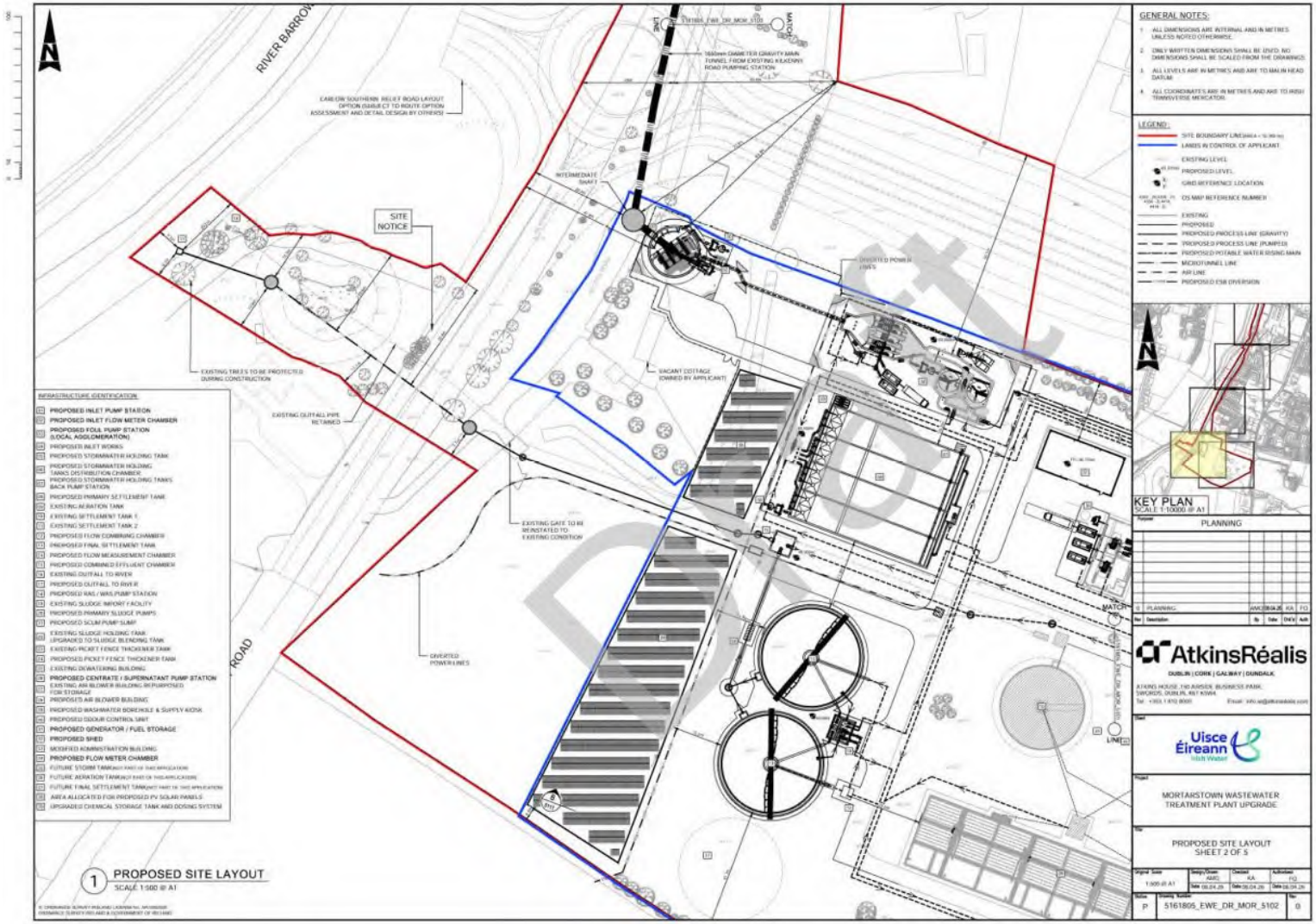


**Figure 1-3 - Proposed WwTP outfall layout and longitudinal section.**

### 1.2.3 Nature of Operations

The proposed development will consist of operations in the wastewater environment which consist of raw (untreated) wastewater, activated wastewater sludge, thickened and dewatered process sludge, leachate, and treated effluent wastewater. Refer to Figure 1-4 below.

In addition, the operations involve use of chemicals for the treatment process. Therefore, the activities to be conducted in the WwTP can be classified as hazardous with potential risk to human health and the environment. Normal operations do not require direct contact between operators and wastewater; however, occasional repair and maintenance facilities may require work in the wastewater environment.

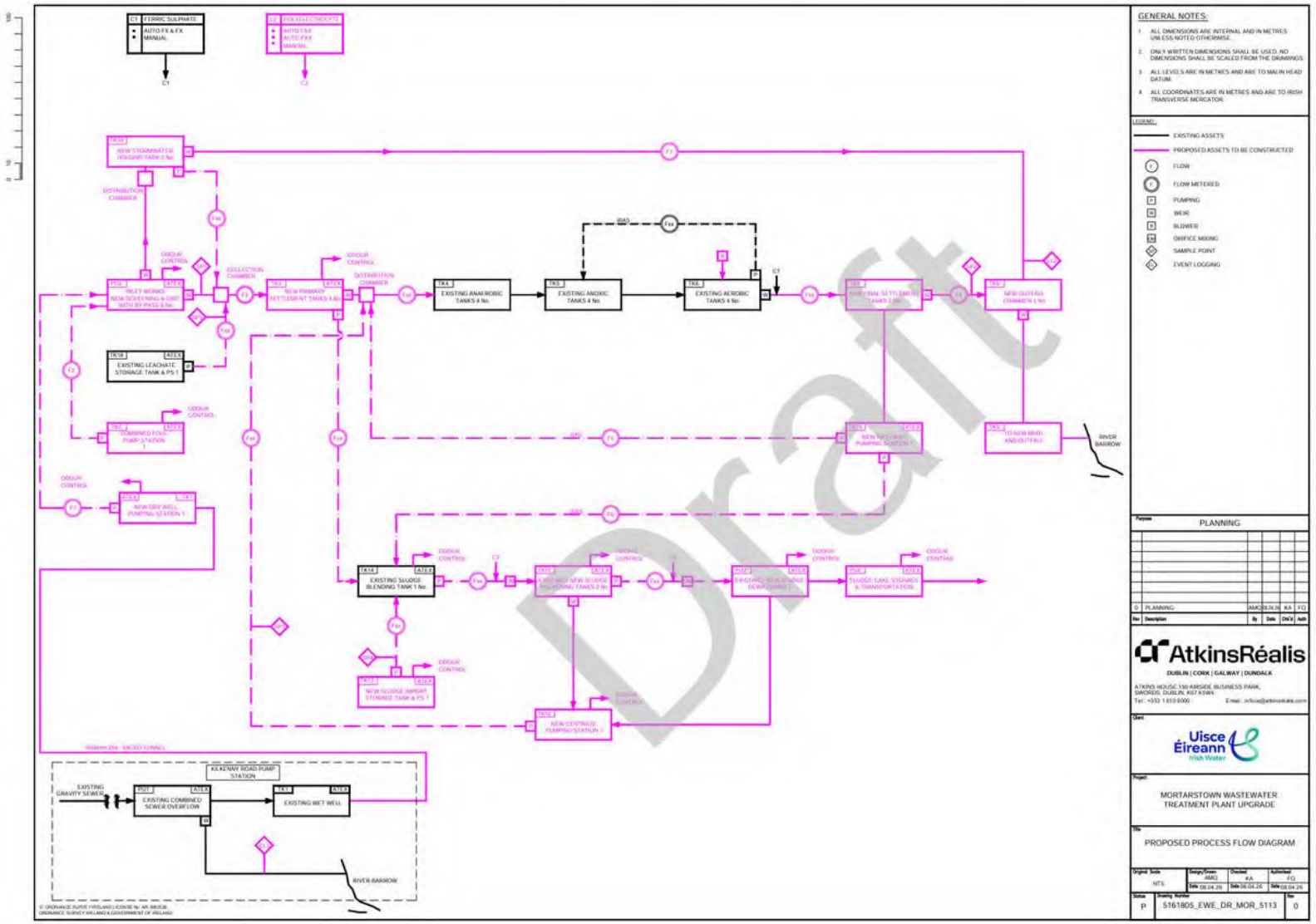


**Figure 1-4 - Process flow diagram**

# 2. Legislative and Regulatory Context

This Operational Waste Management Plan (OWMP) has been prepared in line with all relevant local, national, and EU waste legislation. While there are currently no specific Irish guidelines for OWMPs, this plan has been developed with reference to applicable waste policy, legislation, and best practice guidance at both national and regional levels.

The plan ensures compliance with statutory requirements for the storage, handling, transport, and disposal of waste, and reflects the principles of the waste hierarchy prioritising prevention, reduction, reuse, and recycling before disposal. The OWMP will be reviewed and updated as needed to reflect changes in legislation or site activities.

## 2.1 National and Regional Policy

### 2.1.1 Waste Management Act 1996 as Amended

The implementation of the Waste Management Act in 1996 provided a legal basis for waste management, practice and infrastructure in Ireland. Following the implementation of this Act government policy moved from primarily relying on landfill disposal towards a more sustainable system of waste treatment through the promotion of recycling and recovery. The policy document entitled 'Changing our ways' (DoECLG, 1998) set specific targets for recycling and the now familiar waste hierarchy of prevention, minimisation, reuse/recycling, energy recovery and disposal. This approach was supported by subsequent legislation.

### 2.1.2 Waste Framework Directive

In 2011, the revised EU Waste Framework Directive (2008/98/EC) was transposed into Irish law through the European Communities (Waste Directive) Regulations 2011 (S.I. No.126 of 2011). The Waste Framework Directive focused on sustainable and efficient materials management strategy and provides a legal basis for the waste hierarchy as shown in Figure 2-1 below.

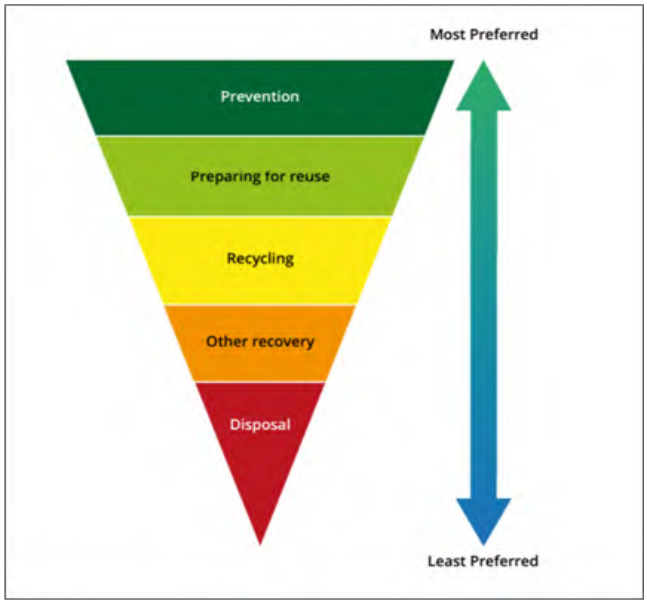


**Figure 2-1 - Accepted Best practice Waste Hierarchy (EPA,2022)**

### 2.1.3 National Waste Management Plan for Circular Economy

The National Waste Management Plan for a Circular Economy 2024 -2030 sets out the framework for the prevention and management of waste across Ireland. This document is a statutory document underpinned by national and EU waste legislation. The strategic vision of the Plan is to rethink the approach to managing waste, and to move towards a 'circular economy' approach where resources are reused or recycled as much as possible and the overall generation of waste is minimised. In order to achieve this vision, the Plan has set out a number of specific and measurable performance targets:

- Achieve a recycling rate of 55% by 2025, 60% by 2030 and 65% by 2035.
- Mitigate total waste growth to 0% growth per person over the life of the Plan (baseline for total waste generated per person per year is 2.7 tonnes based on NWCPO data).
- 6% aggregate reduction in all residual municipal waste by 2030 (including commercial and household).
- Reduce contamination in municipal bins. This is measured as ‘material compliance’ which is the fraction of appropriate material placed in each of the residual, recyclable or food waste recycling bins.
  - A material compliance target of 90% in the dry recycling bin as a minimum standard.
  - A target of 10% per annum increase in material compliance in the residual bin is applied in this Plan. This represents a potential 90% material compliance rate by the end of 2030.

### 2.1.4 Carlow County Development Plan 2022 – 2028

The Carlow County Development Plan 2022–2028 sets out key waste challenges. The plan aims to minimise waste, adapt to climate change, protect water resources, and maintain a clean natural environment. These objectives are embedded in the plan’s strategic framework, particularly in chapters on environment, infrastructure, and climate action.

**Public Wastewater Collection and Treatment - Objectives**

It is the objective of the Council to:

- *PW O1: Facilitate the required upgrade of wastewater projects that may arise during the lifetime of this Plan subject to compliance with all relevant EU and national legislation and normal planning and environmental criteria including upgrade and improvement works on current and planned IW schemes for Tullow WWTP, Bagenalstown/Leighlinbridge WWTP, Mortarstown WWTP, and Borris WWTP.*

**Waste Management**

- *6.6.4 Sludge Management*

  *Irish Water is responsible for the treatment and disposal of sludge from both its water and wastewater treatment plants. The National Wastewater Sludge Management Plan (NWSMP) outlines Irish Water’s strategy to ensure a nationwide standardised approach for managing waste over a 25-year period (with 5 yearly reviews).*

The proposed development aligns with the goals in the Carlow County Development Plan to promote waste minimisation, segregation and recycling, and ensure proper handling of waste streams. By incorporating these objectives into the project’s operational waste management plan, the proposed development supports regional sustainability targets, complies with environmental regulations, and contributes to the circular economy vision set out in the Development Plan.

#### 2.1.4.1 Sewage Sludge Facilities Certificate

*Operators of sewage sludge facilities must register with the local authority for a certificate of registration to meet waste management requirements.*

*In order to comply with article 7 (1) of the Waste Management (Registration of Sewage Sludge Facility) Regulations 2010 (S.I. No. 32/2010) all Operators of sewage sludge storage facilities, must register with the local authority for a Certificate of Registration to allow for the safe storage of treated sewage sludge in their functional area.*

*Each certificate that is issued has specific conditions that must be met, and each facility will be inspected and audited over the year. In addition, an Annual Environmental Report must be submitted to Carlow Co Council each year, detailing how the facility performed over the previous 12 months.*[2]

### 2.1.4.2 Sewage Sludge Facilities Regulations Enforcement

*Local authorities regulate the storage of waste in sewage sludge facilities from waste water treatment plants and septic tanks.*

*Local authorities regulate the storage of treated sewage sludge in permitted facilities in their functional area, originating from wastewater treatment plants. Each facility must apply for a Certificate of registration from the relevant local authority, as specified in the Waste Management (Registration of Sewage Sludge Facility) Regulations 2010 (S.I. No. 32/2010).*

*Each facility is monitored and inspected at random times throughout the year by staff of the Environment Section*[3]*.*

## 2.2 Legislation

The primary legislative instruments that govern waste management in Ireland, and are applicable to the project include:

- Waste Management Act 1996(No.10of 1996), as amended; Secondary legislation include;
  - European Committees (Waste Directive) Regulations 2011 (S.I No. 126 of 2011) as amended
  - Waste Management (Collection Permit) Regulations (S.I No. 820 of 2007) as amended
  - Waste Management (Facility Permit and Registration) Regulations 2007, (S.I No.821 of 2007) as amended
  - Waste Management (Licensing), Regulations 2004 (S.I No. 395 of 2004) as amended
  - Waste Management (Packaging)Regulations 2014(S.I No.282 of 2014) as amended
  - Waste Management (Planning) Regulations 1997 (S.I No. 137 of 1997) as amended
  - Waste Management (Landfill Levy) Regulations 2015 (S.I No. 189 of 2015) as amended by S.I No. 182 of 2019, reg 3.
  - European Union (Waste Electrical and Electronic Equipment) Regulations 2014 (S.I No. 149 of 2014) as amended
  - European Union (batteries and Accumulation) Regulations 2014 (S.I No. 283 0f 2014) as amended
  - Waste management (Food Waste) Regulations 2009 (S.I No. 508 of 2009) as amended
  - European Union (Household Food Waste and Biowaste) Regulations 2015 (S.I. 191 of 2015),
  - Waste management (Hazardous Waste) Regulations 1998(S.I No. 163 of 1998) as amended
  - Waste management (Shipment of Waste) Regulations 2007 (S.I No. 419 of 2007) as amended
  - European Communities (Shipments of Hazardous Waste exclusively within Ireland) Regulations 2011(S.I No. 342/2011
  - European Communities (Transfrontier Shipment of Waste) REGULATIONS 1994 (S.I No. 121 of 1994)

[2] Sewage Sludge Facilities Certificate | Carlow Co Co
[3] Sewage Sludge Facilities Regulations Enforcement | Carlow Co Co

    - European Union (Properties of Waste which render it Hazardous) regulations 2015 (S.I No 233 of 2015)
- Environmental Protection Act 1992 (No.7 of 1992) as amended
- Litter Pollution Act 1997 (No.12 of 1997) as amended
- Planning and Development Act 2000(No.3 of 2000) as amended.

# 3. Waste Management Objectives

The waste management objectives for this project are designed to ensure that waste generated during the operational phase is managed in a safe, efficient, and environmentally responsible manner. The principal aim of this Operational Waste Management Plan (OWMP) is to establish a clear framework for the provision and management of waste material throughout the operational phase of the proposed development.

The key objectives of this OWMP are as follows:

- **Compliance with Legislation**

  To ensure full compliance with all relevant local, national, and EU waste legislation, including the Waste Management Acts, the Waste Framework Directive, and the Cork County Development Plan 2022–2028, particularly in relation to industrial waste.
- **Minimisation of Waste Generation**

  To encourage occupiers to implement site-specific waste management strategies that prioritise waste prevention and reduction at source, in line with the waste hierarchy.
- **Maximisation of Reuse and Recycling**

  To promote the principles of the Circular Economy by supporting reuse and recycling initiatives, effective waste segregation, and engagement with recycling service providers.
- **Safe and Efficient Waste Handling**

  To ensure that all waste is stored, handled, and transported safely. This includes:
  - Designated storage areas for different waste streams
  - Separation of flammable or hazardous materials
  - Provision of appropriate fire safety controls (e.g., fire extinguishers, emergency response plans)
  - Regular staff training on safe waste handling procedures

## 3.1 Expected Waste Streams

Operational waste streams will include the following:

- Screenings and Grit i.e. larger debris (rags, plastics) removed at front-end bar screens and sand, gravel, and small inorganics settle in grit chambers to protect downstream equipment;
- Primary sludge i.e. Solids settled in primary sedimentation tanks. Rich in organics, it represents the first sludge stream removed;
- Scum/floatables i.e. Grease, oil, and floating solids skimmed from the surfaces of primary tanks;
- Secondary sludge i.e. Biomass accumulated in biological treatment (e.g. activated sludge);
- Mixed Liquor i.e. Combination of influent wastewater and biomass in biological reactors. After settling, solids and supernatants are separated; the solids become WAS, the supernatant continues as effluent Combination of influent wastewater and biomass in biological reactors. After settling, solids and supernatant are separated; the solids become WAS, the supernatant continues as effluent;
- Centrate/Supernatant i.e. Liquid stream separated after sludge thickening/dewatering (centrifuges, belt presses). May be recirculated to biological treatment or discharged;
- Dewatered Sludge i.e. Final solid product after thickening, dewatering, and possibly pasteurization or thermal treatment. Treated for safe disposal or beneficial reuse (e.g. land spreading or energy recovery);
- Treated Effluent;
- Non-hazardous waste, including materials such as paper (e.g., newspapers, brochures, confidential documents), cardboard, plastic packaging, metal and aluminium cans, plastic bottles, Tetrapak cartons, glass, organic waste (including segregated food waste), and wooden or plastic pallets; and
- General non-recyclable waste will also be produced in limited quantities.

In addition, small volumes of hazardous waste may arise from specific activities, such as waste electrical and electronic equipment (WEEE), used lighting components, inks, and printer cartridges. All waste will be managed in accordance with relevant waste management regulations and best practice guidelines.

# 4. Waste Types and Classification

In line with the EPA's Waste Classification: List of Waste & Determining if Waste is Hazardous or Non-Hazardous (EPA, 2018), correct waste classification is essential to ensure that collection, transport, storage, and treatment are conducted in a manner that protects human health and the environment and complies with legal obligations.

The waste classification system applicable across the EU, underpins national and international reporting since 2015 has been based on:

- The List of Waste (LoW): Commission Decision 2014/955/EU, amending Decision 2000/532/EC under Directive 2008/98/EC and;
- Hazardous Waste Criteria: Commission Regulation (EU) No 1357/2014, replacing Annex III to Directive 2008/98/EC.

The operation of the proposed development is anticipated to generate a variety of waste types, primarily consisting of non-hazardous commercial waste and small quantities of hazardous waste associated with storage, packaging, and logistics activities. Table 4-1 below outlines the expected waste types along with their corresponding European List of Waste (LoW) codes and classifications. The LoW code (also known as the European Waste Catalogue (EWC) code)) serves as a common method of characterisation various waste streams. The waste codes will determine how and where waste generated can be disposed of. This is not an exhaustive list, and the client will be responsible to characterise, manage and dispose of the waste appropriately in accordance with the relevant legislation

**Table 4-1 - Proposed Waste Types and LoW Classification**

| Waste Type | Components | Description | Low Code | Hazardous |
|---|---|---|---|---|
| **Wastes from Waste Water Treatment Plants** | Larger debris and sand, gravel, and small inorganics settle in grit chambers to protect downstream equipment | Screenings | 19 08 01 | No |
| | | Sludges from treatment of urban waste water | 19 08 05 | No |
| | | Wastes not otherwise specified | 19 08 99 | No |
| **Recyclables** | Paper Waste | Newspapers, brochures, confidential documents | 20 01 01 | No |
| | Cardboard | Packaging materials | 15 01 01 | No |
| | Plastic Packaging | Wrapping, containers, plastic bottles or product containers | 15 01 02 | No |
| | Mixed Packaging | Composite packaging (e.g., Tetrapak) | 15 01 05 | No |

| | | | | |
|---|---|---|---|---|
| | Metal /Aluminium Packaging | Food or drink cans, beverage cans, Foil | 15 01 04 | No |
| | Glass | Bottles, Jars | 15 01 07 | No |
| | Wooden Packaging | Used wooden pallets, crates, boxes | 15 01 03 | No |
| **General waste (non-recyclable)** | Organic Waste | Food waste, biodegradable waste | 20 01 08 | No |
| | Mixed Waste | Expired products, solvents, stained boxes | 20 03 01 | No |
| **Non-Hazardous Electrical and Electronic Equipment** | LED lights | Discarded equipment | 16 02 14 | No |
| **Hazardous Waste** | WEEE (Small Items) | IT equipment, batteries, small electronics | 20 01 36 | Yes (Some) |
| | Printer Cartridges and Toners | Used Ink toner and Cartridges<br>Hazardous components removed from discarded Equipment | 08 03 17<br>08 03 18*<br>16 02 15* | Yes (Some) |

## 4.1 Waste Generation

The estimated waste quantities generated from the proposed development have been summarised in Table 4-2 below. These estimates are based on the design calculations.

**Table 4-2 - Monthly Waste Quantities for the Operational Phase of the Proposed Development**

| Source | Estimated Waste Quantities (L) | | | Estimated Monthly quantities Generated | | No of Bin Lifts Per Month | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Dry Recyclables (Cardboard, Paper, Plastics) | General Waste (Canteen Waste, General Waste, Non-Recyclables) | Hazardous waste | (L) | (KG) | 1100L Green Bin | 1100L Black Bin | 2000L Skip | 20000L Skip |
| **Screening** | 0 | 0 | 6,750 | 6,750 | 7,724 | 0 | 0 | 4 | 0 |
| **Grit Removal** | 0 | 0 | 27,000 | 27,000 | 54,000 | 0 | 0 | 14 | 0 |
| **Dewatered Sludge** | 0 | 0 | 240,000 | 240,000 | 264,000 | 0 | 0 | 0 | 12 |
| **Admin Building** | 240 | 120 | 0 | 360 | 72 | 1 | 1 | 0 | 0 |

# 5. Waste Handling Procedures

This section outlines the key practices for identifying, segregating, storing, and disposal of various waste types generated by the proposed development. Uisce Éireann Standard Operating Procedures for handling and managing wastes must be implemented. All employees will be made aware of these procedures as part of their induction training.

## 5.1 Segregation at Source

To ensure effective waste management and compliance with environmental standards, waste must be segregated at the point of generation. Clear signage and colour-coded, labelled bins/skips should be placed throughout the treatment plant to facilitate proper disposal. Suggested bin labels include:

- General waste
- Recyclables (e.g., plastics, metals)
- Cardboard/cardboard baler
- Hazardous waste (e.g., oils, chemicals, lighting etc.)

A cardboard baler may be installed inside to compact cardboard waste. Once baled, cardboard can be transferred to the designated external storage area for collection.

## 5.2 Storage

Waste will be stored in designated areas to prevent cross-contamination and ensure safety. These areas must be kept tidy and will be accessible for inspection and collection for onward disposal.

## 5.3 Containment

To prevent leaks, spills, and environmental contamination, all waste, especially hazardous materials such as oils, lubricants, and chemicals must be stored in appropriate labelled containers. Where necessary, containers should be placed within bunded areas with a minimum capacity of 110% of the largest container stored or be placed on individual standalone bunds. This ensures compliance with spill containment regulations and protects surrounding areas.

## 5.4 Collection

To maintain operational efficiency and regulatory compliance, waste collection will be scheduled and properly documented. Key practices include:

- Easy access to the storage area and bins by the operator of the waste collection vehicle.
- Establishing a collection schedule: Routine collection schedules should be implemented based on waste generation rates and operational needs. This should include separate schedules for general waste, recyclable, organic and hazardous waste.
- Collection frequency: based on operational needs, waste should be collected weekly, or more frequently if required by volume or type generated.
- Record keeping: Records of waste movements and collections must be logged, including dates, types of waste, quantities, contractor details, disposal methods and final destination of the waste material.
- Review and update procedures to suit operational demand: Periodically assess the effectiveness of collection schedules, adjusting as needed to reflect changes in operations or regulations.

- Quarterly review of waste generation and an examination of how quantities of waste generated can be decreased.

# 6. Waste Collection and Disposal

A well-structured waste collection and disposal system ensures that environmental impacts are minimised, regulatory compliance is maintained, and operational efficiency is supported across all activities.

Uisce Éireann will implement waste management strategies that will include opportunities to recycle/re-use materials, segregation, collection, storage, and disposal of various waste streams generated from activities within the treatment plant. This system will be designed to align with national waste legislation, local authority guidelines, and the principles of the waste hierarchy, prioritising waste prevention, reuse, recycling, and recovery before disposal.

All waste transport and disposal / recovery must be carried out in accordance with all relevant waste management legislation and any subsequent future legislation which may apply. Waste leaving the facility is handled by licensed waste contractors who are authorised to collect, transport, and process the specific types of waste generated on site. Contractors must hold valid waste collection permits. All of the appointed waste collection providers during the Operational Phase must hold a valid waste collection permit issued by the National Waste Collection Permit Office (NWCPO) and operate in compliance with national and local environmental regulations. The facilities that these contractors use to dispose of the municipal waste must be a registered waste facility with a valid waste permit / waste licence. All waste disposal / recycled records should be maintained by the appointed maintenance company.

## 6.1 Information and Communication

The Waste Manager must provide clear, written information outlining the different types of waste streams, their classification, and the procedures for waste separation, segregation, storage, and mode for collection.

## 6.2 Waste Documentation

Waste to be transported for onward disposal / recovery must be carried out in accordance with relevant waste management legislation and any subsequent future legislation which may apply. Waste removed from site will be tracked and recorded. The Waste Manager must ensure a robust documentation system is in place to ensure full traceability of all waste movements. This includes:

- Completion of waste dockets in line with the requirements of the Waste Management Act 1996 as amended for each consignment of waste leaving the site.
- Maintenance of electronic and hard copy records of all waste handling records including details such as waste type, quantity, date of collection, and waste carrier information.
- Records must be readily accessible on site for inspection and retained for the legally required duration.

## 6.3 Disposal and Recycling Destinations

The Waste Manager must ensure the following checks are carried out before engaging any contractors for disposal or recycling:

- The receiving facility should be authorised to accept the specific types of waste.
- The facility must have a current waste permit or waste licence that is valid and appropriate for the waste stream.
- Maintain a list of approved disposal and recycling destinations, including copies of their permits and contact details.

## 6.4 Management of Stormwater and overflows

Surface water generated on-site from roads, car parks, roof areas, and stormwater will be directed to the effluent water chamber. Hydrocarbon interceptors will be installed to treat surface water prior to the discharge of the treated effluent to the River Barrow.

# 7. Roles, Responsibilities and Training

## 7.1 Roles and Responsibilities

Effective waste management relies on clearly defined roles and responsibilities to ensure compliance with environmental regulations, promote sustainable practices, and maintain a clean and safe environment.

The Waste Manager is responsible for ensuring that all waste generated at the wastewater treatment plant is managed in a safe, compliant, and environmentally responsible manner. Key responsibilities include:

- Waste Identification and Classification
  - Identify and classify all waste streams generated on-site (e.g. screenings, grit, sludge, hazardous waste, general waste).
  - Ensure wastes are correctly categorised in accordance with relevant waste legislation and European Waste Catalogue (EWC) codes.

- Waste Segregation and Storage
  - Implement appropriate waste segregation practices at source.
  - Ensure proper labelling and storage of all waste types in designated areas.
  - Oversee the provision and maintenance of suitable containment systems (e.g. skips, tanks, bunded areas).

- Compliance and Regulatory Management
  - Ensure compliance with all relevant environmental legislation, permits, and EPA / Uisce Éireann requirements.
  - Maintain up-to-date waste records, including waste transfer notes, collection permits, and contractor licences.
  - Coordinate waste audits and inspections.

- Waste Collection and Disposal
  - Arrange for the collection, transport, and disposal or recovery of waste by authorised contractors.
  - Verify that all third-party waste contractors hold appropriate permits and licences.
  - Promote waste recovery and recycling wherever practicable.

- Sludge Management
  - Oversee the handling, treatment, storage, and disposal/reuse of sewage sludge.
  - Ensure sludge management practices comply with regulatory requirements (e.g. landspreading, disposal routes).

- Record Keeping and Reporting
  - Maintain accurate records of waste generation, movement, and disposal.
  - Prepare regular reports for internal management and regulatory bodies.
  - Track waste quantities and identify opportunities for reduction.

- Continuous Improvement
  - Identify opportunities to minimise waste generation and improve recycling rates.

- Implement waste reduction initiatives and resource efficiency measures.
- Review and update waste management procedures regularly.

## 7.2 Training

All site personnel and contractors must receive appropriate training to ensure consistent and compliant waste management practices. It is the responsibility of the Waste Manager to ensure the training in the following areas:

- Good waste management practices: Understanding and identifying opportunities to minimise waste generation, for example, discussions with suppliers on packaging, take-back schemes by the supplier, seeking opportunities to reuse/repurpose materials.
- Waste segregation procedures: Understanding waste categories, colour-coded bins, and proper disposal methods.
- Health and safety protocols: Safe handling of hazardous materials, use of personal protective equipment (PPE), and spill response.
- Legal and environmental compliance: Awareness of regulatory requirements, documentation standards, and the importance of traceability.

Training will be:

- Delivered as part of induction programmes for all new staff and contractors.
- Refreshed periodically, particularly where there are changes to procedures, operations, or regulatory requirements.
- The training programme will cover key areas including:
  - Emergency response procedures
  - Chemical handling
  - Confined space entry
  - Fire safety
- Regular emergency drills will be conducted to ensure staff preparedness and familiarity with response procedures.
- All training activities will be formally documented and recorded.
- Attendance logs and training materials will be retained in both electronic and hard copy formats for audit and compliance purposes.
- All incidents will be subject to investigation.
- Appropriate corrective and preventive actions will be implemented following incidents.
- The training and emergency response framework will be reviewed on an ongoing basis.
- Continuous improvement measures will be applied to enhance procedures, safety, and environmental performance.

The Waste Manager is responsible for ensuring that training is up to date and that all personnel are competent in their waste management duties.

# 8. Monitoring and Reviews

Regular monitoring and reviews will be conducted to ensure the effectiveness, compliance, and continuous improvement of waste management practices within the facilities. This section outlines the mechanisms for auditing, performance tracking, and enhancement of waste handling systems.

## 8.1 Regular Audits and Inspections

A waste management audit is a systematic evaluation of waste management practices which identifies potential issues and highlights the benefits of waste prevention and minimisation. Waste audits and inspections will be implemented monthly to maintain high standards of environmental performance and regulatory compliance.

It will be the responsibility of the Waste Manager to ensure that waste audits include but are not limited to the following:

- Audits should be conducted using a standardised or best practice guidance waste auditing checklists.
- Audits should assess the opportunities identified to reuse/repurpose waste.
- Audits should assess compliance with segregation, storage, containment, and documentation procedures.
- Audits should identify areas of non-compliance or inefficiency.
- Audits should include visual inspections of internal and external storage areas, bin labelling, bunding, and cleanliness.
- The findings of the waste audits should be included as an item on the quarterly/biannua meetings.

Audit findings will be documented and reviewed by the Waste Manager, with corrective actions assigned and tracked to resolution. Additionally, Key Performance Indicators (KPIs) will be established to measure progress and drive accountability. The following KPIs will be considered but will not be limited to the following:

- Percentage of waste recycled or reused
- Reduction in general waste volumes
- Compliance rate with segregation protocols
- Number of audit non-conformances per month

## 8.2 Performance Indicators

Performance indicators provide measurable insights into the effectiveness of the waste management system and support data-driven decision making. They also play a key role in identifying areas of improvement. Indicators should be assessed monthly and reviewed quarterly to be included in site quarterly management reports. Key metrics include but are not limited to the following:

- Recycling rate (%): Proportion of total waste diverted from landfill through recycling or reuse e.g. Biosolids reuse
- Final Effluent Concentrations (mg/L)
- Sludge disposal /reuse rates.
- Percentage compliance with discharge limits
- Frequency of waste collections: To assess efficiency and potential for consolidation.
- Training completion rate: Percentage of staff and contractors trained in waste procedures.

## 8.3 Continuous Improvement Measures

The proposed development is committed to a culture of continuous improvement in waste management practices. Improvement measures include:

- A Review and update of procedures based on audit findings, regulatory changes, or operational feedback.
- Trialling new waste reduction initiatives, such as reusable packaging or digital documentation to reduce paper waste.
- Targeted awareness initiatives, including educational campaigns, suggestion schemes and recognition programmes that reward good waste practices. These efforts help to foster a culture of environmental responsibility and continuous development.
- Benchmarking performance against industry standards or other similar operational sites for reference.

Annual reviews of the waste management system will be conducted by the Waste Manager to evaluate overall performance, update objectives, and set new targets for the coming year. Where deficiencies are identified, corrective actions will be issued, these may include additional training, enforcement measures, or penalties.

# 9. Emergency Response Plan

In the event of an emergency involving the handling, storage, or transport of waste—such as spills, fires, explosions, or unauthorised discharges—specific procedures must be followed to ensure the safety of personnel and the protection of the environment. The Emergency Response Plan outlines clear protocols tailored to the nature and scale of potential incidents and applies to all waste-related activities within the proposed development, including designated waste storage areas, loading and unloading zones, and internal transport routes.

The proposed development is subject to a range of potential emergency situations, including process failures (e.g. power outages and equipment breakdown), environmental incidents (e.g. untreated or partially treated discharges and chemical spills), fire and explosion risks, health and safety hazards, and external events such as flooding or extreme weather. These scenarios have the potential to adversely affect plant operations, environmental compliance, and worker safety. Accordingly, the implementation of robust emergency procedures is essential to ensure rapid response, effective containment, and minimal impact on human health and the receiving environment.

## 9.1 Risk Identification

The following risks identified include;

- Surface water contamination from untreated or partially treated effluent discharges
- Groundwater- pollution due to leaks from tanks, pipelines, or sludge storage
- Nutrient overloading leading to eutrophication in receiving waters
- Odour emissions impacting nearby receptors
- Noise and Vibration from pumps, blowers and machinery
- Vehicle collisions during waste transport
- Equipment failure

## 9.2 Emergency Response Procedures

The standard procedures for key emergency scenarios have been outlined below.

### 9.2.1 Spill Response

In the event of a waste spill involving hazardous or liquid waste, immediate containment is key to minimize environmental impact. Trained personnel should:

- Alert the designated Waste Manager.
- Use spill containment kits to control and absorb the material.
- Isolate the affected area to prevent further spread.
- Dispose of contaminated materials in accordance with regulatory requirements.
- Record the incident and initiate a post-event review.

### 9.2.2 Fire Response

In the event of a fire involving waste materials, especially flammable or combustible substances. Trained personnel should perform the following to minimalize environmental impacts:

- Activate the nearest fire alarm and notify emergency services (112 or 999).
- Evacuate the area using designated escape routes.
- Use appropriate fire extinguishers only if safe to do so.
- Fire Wardens will conduct roll calls at assembly points.
- The Waste Manager will liaise with the fire brigade and provide site-specific information

### 9.2.3 Medical Emergencies

If an injury occurs during waste handling or an emergency response;

- Call emergency services immediately (112 or 999).
- Administer first aid if trained and safe to do so.
- Ensure the area is safe and secure to prevent further harm.
- Report the incident to the responsible Emergency Officer and complete an incident report.

### 9.2.4 Evacuation

In the event of a major incident requiring site evacuation:

- All personnel must follow clearly marked evacuation routes to the nearest emergency assembly point.
- Waste Managers will assist Fire warden in guiding personnel to safety.
- A roll call will be conducted to account for all staff and visitors.
- It is important for personnel to note that, all personnel must remain at the assembly point until clearance is given by the site Emergency Officer to re-enter the premises.

### 9.2.5 General Emergency Response Actions

- Ensure safety of personnel (evacuate if required)
- Raise alarm and notify control room
- Isolate hazard (equipment, chemicals, electrical systems)
- Contain and mitigate impact (spill kits, diversion)
- Notify authorities (management, EPA, emergency services)
- Record and report incident

# 10. Conclusion

This Operational Waste Management Plan provides a structured framework to ensure that waste generated at Mortarstown WwTP facility are managed safely, efficiently, and in full compliance with environmental regulations.

By implementing clear procedures for segregation, storage, containment, documentation, and continuous monitoring, the plan provides a guide for a sustainable and environmentally responsible operations to help achieve sustainability targets across the site.

# 11. References


British Standards Institution (BSI). 2005. 'BS 5906:2005 Waste Management in Buildings – Code of Practice.

Building Control Northern Ireland (BCNI). 2010. 'Waste Storage Guide for Northern Ireland.'

Carlow County Council (CCC). 2022. 'Wicklow County Development Plan: 2022-2028'.

Carlow County Council Development Plan 2022 – 2028 Layout

Department of Communication, Climate Action and Environment (DoCCAE). 2020. 'A Waste Action for a Circular Economy.'

DoCCAE. 2021. 'A Resource Opportunity – Waste Management Policy in Ireland.'

DoCCAE. 2021. 'Waste Action Plan for a Circular Economy.'

Department of Environment, Community and Local Government (DoECLG). 2013. 'Waste Management Policy in Ireland.'

DoHPLG. 2018. 'Sustainable Urban Housing: Design Standards for New Apartments Guidelines for Planning Authorities.'

Department of Environment, Health and Local Government (DoEHLG). 2002. 'Preventing and Recycling Waste: Delivering Change.'

DoEHLG. 1998. 'Waste Management: Changing Our Ways'.

Department of Housing, Local Government and Heritage (DoHLGH). 2022. 'Sustainable Urban Housing Design Standards for New Apartments: Guidelines for Planning Authorities.'

Department of the Environment, Climate and Communications 'National Waste Management Plan For A Circular Economy 2024-2030'

Environmental Protection Agency (EPA). 2020. 'National Waste Statistics: Guidance for estimating quantity of waste generated on-site'.

Environmental Protection Agency (EPA). 2015. 'Design out Waste: Preparation of Waste Reduction Factsheets for Design Teams'.

EPA, 2024. 'Circular Economy and Waste Statistics Highlights Report 2022.

EPA. 2022. 'Circular Economy Programme 2021-2027'

EPA. 2021. 'Green Procurement Guidance for the Public Sector.'

EPA. 2002. 'European Waste Catalogue and Hazardous Waste List.'

European Commission (EC). 2011. 'S.I.126 of 2011. 'Waste Framework Directive Regulations 2011.'

EU. 2014. S.I. 149 of 2014 'European Union (Waste Electrical and Electronic Equipment) Regulations 2014

EC. 2013. S.I. 283 of 2014 ‘Waste Batteries and Accumulators Regulations 2014.’

Government of Ireland. 1996. ‘Waste Management Act’

MyWaste. ‘Ireland’s Guide to Managing Waste.’ Available at: https://mywaste.ie (Last accessed 13.01.2025)

Sewage Sludge Facilities Certificate | Carlow Co Co

Sewage Sludge Facilities Regulations Enforcement | Carlow Co Co

Southern Waste Region. 2015. ‘Waste Management Plan 2015-2021.’

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