

# **CLONASLEE FLOOD RELIEF SCHEME**

Appendix 15.1: Waste Management Plan



Document status						
Version	Purpose of document	Authored by	Reviewed by	Approved by	Review date	
S5. P01	Issue for Planning	JG	KM	KM/PC	10.10.2024	

Approvariorissue	
BC	27 <sup>th</sup> February 2025

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# ACCRONYMS

Acronym	Meaning	
EIA	Environment Impact Assessment	
ICW	Integrated Constructed Wetlands	
WMP	Waste Management Plan	

# 1 INTRODUCTION

This Waste Management Plan (WMP) outlines the best practice procedures during the construction phase of the proposed flood relief scheme (FRS) at Clonaslee in relation to waste prevention and minimisation through recycling, recovery and reuse at each stage of the construction phase for the Proposed Scheme. Disposal of waste will only occur if there are no other options.

A site-specific WMP will be prepared by the Contractor and submitted to Laois County Council, which will be underpinned by all the measures set out in this preliminary WMP. The site specific WMP will be prepared by the contractor prior to the commencement of any works in order to ensure all works are carried out in a manner designed to avoid and minimise any adverse impacts on the receiving environment. The site-specific WMP will incorporate all elements of this preliminary Plan that accompanies the planning application for the Proposed Scheme.

## 1.1 Waste Management Objectives

The principal objective of the WMP is to support sustainable resource and waste management. A key objective is to use resources more efficiently and the generation of waste is minimised. To achieve resource efficiency there is a need to move from a traditional linear economy to a circular economy.

However, where residual waste is generated, it will be dealt with in a way that follows the waste hierarchy (See **Section 1.2.1**) set out in the European Community (Waste Directive) Regulations 2011 (S.I. No. 126/2011), as amended and contributes to the economic, social and environmental goals of sustainable development.

## 1.2 Legislation and Guidance

Specific legislation relating to waste management considered within this WMP includes:

- Waste Framework Directive (2008/98/EU), as amended.
- Waste Management Acts 1996 to 2024, as amended.
- European Communities (Waste Directive) Regulations 2011 (S.I. No. 126 of 2011), as amended.

It is noted that the Waste Directive Regulations 2011, as amended, set out the exclusions from the scope of the 2008 directive which includes the following under Article 3(1)(c):

"... uncontaminated soil and other naturally occurring material excavated in the course of construction activities where it is certain that the material will be used for the purposes of construction in its natural state on the site from which is was excavated".

Materials arising from the Proposed Scheme which fall within this provision are therefore not subject to the requirements of EU and national waste legislation.

Furthermore, Article 27 of the same regulations allows an economic operator to determine, under certain circumstances, that a material is a by-product and is not a waste. Article 27 was introduced into Irish law to implement Section 5 of the Waste Framework Directive (2008/98/EU), as amended. Excess soil and stone produced during construction activities will be classed as a by-product if it meets each of the four by-product conditions as follows:

- a. Further use of the substance or object is certain.
- b. The substance or object can be used directly without any further processing other than normal industrial practice.
- c. The substance or object is produced as an integral part of a production process.
- d. Further use is lawful in that the substance or object fulfils all relevant product, environmental and health protection requirements for the specific use and will not lead to overall adverse environmental or human health impacts.

The methodology to inform the Waste Management Plan has had regard to the general guidance and the following topic-specific guidance:

- EPA (2021) Best Practice Guidelines for the Preparation of Resources & Waste Management Plans for Construction and Demolition Projects.
- IEMA (March 2020) Guide to Materials and Waste in Environmental Impact Assessment.
- EPA (2020) Guidance on Waste Acceptance Criteria at Soil Recovery Facilities.
- EPA (2020) By-Product Guidance Note, A Guide to By-products and Submitting a By-product Notification Under Article 27 of the European Communities (Waste Directive) Regulations 2011 (S.I. No 126 of 2011).
- EPA (2019) Guidance on Stone and Soil By-Products in the context of Article 27 of the European Communities (Waste Directive) Regulations 2011.
- TII (2017) The Management of Waste from National Road Construction Projects, GE-ENV-01101.

The Waste Management Act 1996 (as amended) provide measures for waste management improvements. The Act provides a regulatory framework for meeting higher environmental standards set out by other national and EU legislation. The Act requires for all essential licenses and authorisations to be obtained for waste related activities. The Contractor for the Proposed Scheme will ensure that all contractors hired to remove waste from the site hold valid waste collection permits. It is a requirement that all waste transported offsite is delivered to a licensed or permitted waste facility. The hired waste contractors and subsequent receiving facilities must adhere to the conditions set out in their respective permits and authorisations.

## 1.2.1 Waste Management Hierarchy

The Waste Management Hierarchy outlines how to efficiently manage waste. The key components of EU, national and local policy legislation and guidance which have influenced the Proposed Scheme are summarised as follows:

- 1. **Prevention and Minimisation -** Prevention of waste is the preferred option such that any surplus materials generated are reused within the Proposed Scheme. This means that products, materials, and resources are maintained at their highest value in the economy for as long as possible, the generation of waste is minimised, and the principles of circular economy are implemented.
- 2. **Reuse and Recycling of Waste -** Where construction waste is generated, it should be sourceseparated to facilitate reuse, recycling and maximise diversion of waste from landfill.
- 3. **Disposal to a Licensed Waste Facility -** Where waste cannot be prevented, reused, or recycled, it should be transported and disposed of in accordance with the Waste Management Acts 1996 to 2016, as amended. Waste may only be transferred from site by a waste collection permit holder and delivered to an authorised waste facility i.e. a facility which holds a Certificate of Registration, Waste Facility Permit or Waste Licence.

## 1.3 Responsibilities and Training

The following responsibilities will be followed throughout the Construction Works:

- Prior to the construction works, the Contractor of the Proposed Scheme will be appointed.
- All relevant personnel on site will be made aware of the Proposed Scheme's WMP.
- A copy of the WMP will be distributed amongst all site personnel and sub-contractors.
- All site personnel and sub-contractors will be informed of the WMP's objectives and their responsibilities to ensure compliance..
- The Contractor will be responsible for informing Contractor staff and sub-Contractors of content of the Plan and for maintaining and keeping the Records set out below.
- In the event of the Contractor leaving the project team the Contractor will nominate a suitable replacement.

The following training will be relevant for the construction works:

• The Contractor will ensure that required training for the handling and management of wastes on site is provided to staff as required.

- All construction workers on site of the Proposed Scheme will be trained in materials management. All construction workers should be able to:
  - Distinguish reusable materials from those suitable for recycling.
  - Ensure maximum segregation at source.
  - Co-operate with site manager on the best locations for stockpiling reusable materials.
  - Separate materials for recovery.
  - Identify and liaise with waste contractors and waste facility operators.

# 2 CONSTRUCTION PHASE WASTE MANGEMENT

## 2.1 Description of the Works

The construction of the Proposed Scheme will involve the construction of the following:

- Construction of a new embankments made from impermeable clay along the Brittas Loop Walk path and along the left bank of the River Clodiagh opposite the Uisce Éireann ICW wastewater treatment facility.
- Construction of a 'tree-pole' type debris trap across the river Clodiagh and accessible via the Brittas loop walk path. It will incorporate a slipway, fencing and gate.
- Installation of a headwall to an existing culvert crossing the Brittas loop walk path.
- Reinforcing an existing stone wall along the River Clodiagh in the Chapel Street area. This will be achieved by building an in-situ reinforced concrete wall immediately outside the existing wall. This will receive a stone clad finish.
- Construction of a new reinforced concrete flood wall along the right bank of the River Clodiagh within the Uisce Éireann ICW wastewater treatment facility.
- Establishment of and reinstatement of temporary construction compounds.

# 2.2 Waste Arisings and Proposals for Minimisation, Reuse and Recycling of Construction Waste

Construction waste will arise from the Proposed Scheme via road excavations, excavation and replacement of material, vegetation removal, concreting activities and office/domestic waste from office and welfare compounds. Appropriate measures will be undertaken to minimise excess waste through the Construction Phase, including:

- Ensuring stripped topsoil is correctly stored and protected to enable re-use in reinstatement
- Ensure excavated riverbed material is stored separately and not contaminated for use in reinstatement
- Accurate site take-offs and collaborative interaction with suppliers to avoid over-ordering of concrete for example
- Taking care not to contaminate excavated material with other construction waste to maximise the possibility that it can be used elsewhere
- Best practice excavation support installation to avoid over-excavation
- Set up and monitoring of waste segregation protocols
- Diligent office and canteen waste management.

## 2.3 Waste Arising from Construction Activities

## 2.3.1 Vegetation Removal

The appointed Contractor will conduct site clearance works including felling of trees and removal of vegetation from working areas within the lands. Vegetation removal will include tree, shrub, invasive alien species and hedge removal to allow for construction activities to take place. Vegetation clearance will be kept to the minimum.

Area	Demolition Works	Demolition	Strateg	Strategy	
			Dispose	Reuse	
	Clearance - trees	9 no.	9 no.	0 no.	
Brittas Wood	Vegetation Clearance and topsoil strip	800 m <sup>2</sup>	800 m <sup>2</sup>	Reusing topsoil	
	Topsoil strip for compound and construction area	2,000 m <sup>2</sup>	2,000 m <sup>2</sup>	100%	
Chapel Street	Clearance – trees (street)	10 no.	10 no.	0 no.	
	Clearance – trees (garden)	11 no.	11 no.	0no.	
Tullamore Rd	Vegetation Clearance/Topsoil strip	4,000 m <sup>2</sup>	4,000 m <sup>2</sup>	Reusing topsoil	
	Clearance - trees	1 no.	0 no	1 no.	
The ICW	Vegetation Clearance	300 m <sup>2</sup>	300 m <sup>2</sup>	Reusing topsoil	
	Clearance - trees	0 no	0 no	0 no.	

#### Table 2-1: Proposed Vegetation Clearance Quantity

## 2.3.2 Site Clearance - Road Demolitions

Demolition waste will include a combination of asphalt and concrete. As part of the proposed works, it is proposed to excavate the road along Chapel Street and the access road in the ICW to allow for the installation of new flood walls (See **Table 2-2**).

Table 2-2:	Proposed	Demolition	Works
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Watercourse	<b>Demolition Works</b>		Stra	tegy
		Demolition	Dispose	Reuse
Chapel Street	Demolition of road	1,000 m <sup>2</sup>	1,000 m <sup>2</sup>	20%
	Demolition of road	300 m <sup>2</sup>	300 m <sup>2</sup>	20%
The ICW	Demolition of existing concrete kerb	70 m	70 m	0 m

## 2.3.3 Excavation Waste

It is expected that approximately 7,500 m<sup>3</sup> of soil and stone material will arise as a result of the Proposed Scheme. There will be some opportunities for reuse on site as, for example trench backfill. Off-site reuse options for surplus clean and inert excavated material include reuse as a by-product on other construction sites subject to Article 27 notification to the EPA. Where reuse cannot be employed, there is option for recovery at suitable authorised waste facilities i.e. facilities which have been granted a Certificate of Registration, Waste Facility Permit or EPA license. Approximately 2,000 m<sup>3</sup> of excavation waste is proposed to be disposed.

Watercourse	Excavation Works	Excavation (approx. m <sup>3</sup> )	Disposal (approx. m³)	Reuse (approx. m <sup>3</sup> )
	Embankment cut off trench	340	340	0
<b>.</b>	Debris Trap foundation excavation	57	57	0
Brittas Wood	Culvert excavation	32	32	0
	Compound A	275	0	275

Table 2-3: Excavations Required as Part of Construction Works

Watercourse	Excavation Works	Excavation (approx. m <sup>3</sup> )	Disposal (approx. m <sup>3</sup> )	Reuse (approx. m <sup>3</sup> )
Chapel Street	Flood wall excavation	1,400	1,200	200
	Compound B	2,500	0	2,500
Tullamore Rd	Embankment cut off trench	350	350	0
	Compound C	2,500	0	2,500
The ICW	Flood wall excavation	90	45	45

#### 2.3.4 Individual Waste

In the construction of the infrastructure necessary for the Proposed Scheme, a small amount of general individual waste will be generated by day-to-day activities of the construction staff during the construction phase. This will be comprised of the staff's food waste, foul waste and fuel waste generated by the individual's personal transport.

## 2.4 Reuse

Many materials generated from Construction Works can be reused before they have to be disposed of, including:

- The tree cleared along the Tullamore Road will be mulched for re-use on-site.
- All topsoil stripped will be stored for reinstatement.
- Off-site reuse options for surplus clean and inert excavated material include reuse as a by-product on other construction sites subject to Article 27 notification to the EPA.

## 2.5 Recycling

Where reuse cannot be employed, options for recovery at suitable authorised waste facilities will be investigated. The scenarios for the Proposed Scheme include:

- Non-hazardous inert road demolition waste will be segregated for recycling or recovery purposes.
- Other hazardous materials encountered from demolition works, if any, will be segregated and stored in accordance with best practice for onward management (TII, 2017) (HSA, 2016), typically by recycling or recovery with very small volumes, if any, requiring incineration.
- For excavated material that is not considered a by-product, testing will be undertaken to determine if it is suitable for delivery to recovery facilities authorised in accordance with the Waste Management Act, 1996 as amended, for recycling/soil recovery.
- Soil and stone material that is excavated, but which is not suitable for reuse on site, or is surplus to requirements, will be stockpiled, tested and classified. Those suitable for reuse will be transported to a soil recovery facility.
  - Where feasible classification for reuse on other construction site(s), as a by-product under Article 27, will be considered. Where the material is not suitable for reuse it will be categorised in accordance with the Waste Classification List of Waste and Determining if Waste is Hazardous or Non-hazardous (EPA, 2018).

## 2.6 Disposal

Where excavated material is not a by-product and does not meet the test criteria for recycling or reuse it will be delivered to authorised disposal facilities. The hazardous and non-hazardous material identified at the respective work sites and they can only be disposed of at hazardous and non-hazardous facilities respectively.

## 2.7 Waste Collection

Waste from demolition works, vegetation removal, individual and excavation will be transported by authorised waste collectors in accordance with the Waste Management (Collection Permit) Regulations, 2007 (as amended). An up-to-date list of waste collectors used to transport waste from site during the works will be maintained on site and updated by the contactor.

## 2.8 Waste Recovery and Disposal Offsite

Waste generated from demolition and construction activities will be transported to authorised waste facilities in accordance with the Waste Management Acts 1996 to 2011, as amended. An up-to-date list of all waste facilities to which waste from the site will be delivered will be maintained on site and updated by the contractor.

## 2.9 Costs of Waste Management

In line with the Waste Framework Directive 2008/98/EC there is a legal requirement that the cost of disposing of waste must be borne by the holder of waste or by the producers of the product from which the waste came (EPA, 2021).

Integrated waste management, soil recovery, waste transfer, and landfill facilities are the predominant type of facilities which manages waste within 55 km of the Proposed Scheme. Typically, the current cost of disposal of waste to landfill in Ireland exceeds €170 per tonne. From 1st September 2023 in accordance with the Waste Management (Landfill Levy) (Amendment) Regulations 2023 (S.I. No. 398/2023) the 'landfill levy' increased to €85 per tonne for waste disposed to landfill.

In addition to landfill operator fees and landfill levies there are additional costs included in the 'true cost of waste management' including:

- The purchase cost of waste materials (including imported soil)
- Handling costs
- Storage and transportation costs
- Revenue generated from sales

To reduce costs and waste, where appropriate waste materials generated during Construction Phase will be reused and recycled within the Proposed Scheme and materials should be carefully stored and handled to minimise risk of damage. Waste material not suitable for reuse and recycling will be sent for recovery/recycling at authorised facilities.

## 2.10 Record Keeping and Auditing

Systems will be implemented to record all waste arisings, movements and treatments of construction waste. This system will enable the contractor to measure and record the quantity of waste being generated. It will highlight the areas from which most waste occurs and allows the measurement of arisings against performance targets. The WMP can then be adapted with changes that are seen through record keeping.

The waste contractor (fully licensed) appointed to remove waste from the site will be required to maintain documented records for all waste transported out of the site. Each record will contain the following:

- Consignment Reference Number
- Material Type(s) and EWC Code(s)
- Quantity (tonnes) of the waste and material
- Company Name and Address of Site of Origin
- Trade Name and Collection Permit Ref. of Waste Carrier
- Trade Name and Licence Ref. of Destination Facility
- Date and Time of Waste Dispatch

- Registration no. of Waste Carrier vehicle
- Weight of Material
- Signature of Confirmation of Dispatch detail
- Date and Time of Waste Arrival at Destination
- Site Address of Destination Facility

Waste audits will be arranged by the waste manager once works for the Proposed Scheme have begun.

# **3 WASTE MANAGEMENT PLAN CONCLUSION**

The WMP will be adhered to by all staff involved during the Construction and Operational stages of the Proposed Scheme. The WMP will be detailed during the induction process for all site personnel. The waste hierarchy will be employed when designing the Proposed Scheme. The waste hierarchy will require the reuse of some construction waste which will reduce the requirement of using raw, virgin materials therefore further minimising waste levels.

This preliminary WMP has been prepared to outline the main objectives that are to be adhered to for the preparation of a more detailed WMP to be completed for the Proposed Scheme.