TOBIN

# Leitrim County Council
# Dromahair Flood Relief Scheme
# Outline Construction & Demolition Waste Management Plan

Comhairle Chontae Liatroma
Leitrim County Council

BUILT ON KNOWLEDGE

| Document Control Sheet | |
|---|---|
| Document Reference | 11271 Dromahair Construction & Demolition Waste Management Plan |
| Client: | Leitrim County Council |
| Project Reference | 11271 |

| Rev | Description | Author | Date | Reviewer | Date | Approval | Date |
|---|---|---|---|---|---|---|---|
| A | First Issue | FOC/KD | 19/08/2024 | KD | 22/08/2024 | PC | 18/09/2024 |
| B | Planning Issue | FOC | 31/10/2024 | KD | 15/11/2024 | PC | 15/11/2024 |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

## Table of Contents



## List of Tables

## List of Figures

# 1. INTRODUCTION

## 1.1 BACKGROUND

TOBIN Consulting Engineers were appointed in September 2021 by Leitrim County Council to carry out a Feasibility Study of the flood risk to the Dromahair area. The study included the review of the CFRAM Hydraulic Modelling and all other relevant water level data in the town of Dromahair and the surrounding catchment, to quantify the risk of flooding to existing properties identified within the study area. The feasibility study was completed by TOBIN in September 2022.

The following properties have been identified as at risk of flooding from the River Bonet:

- Residential Property No. 1
- The 'Mill' Apartments, sewage pumping station (serving St. Phelim's nursing home) and
- the Mill Master House Accommodation
- The Clubhouse Bar & Riverbank Restaurant
- Residential Property No. 2

Figure 1-1 shows the location of the properties and the River Bonet.

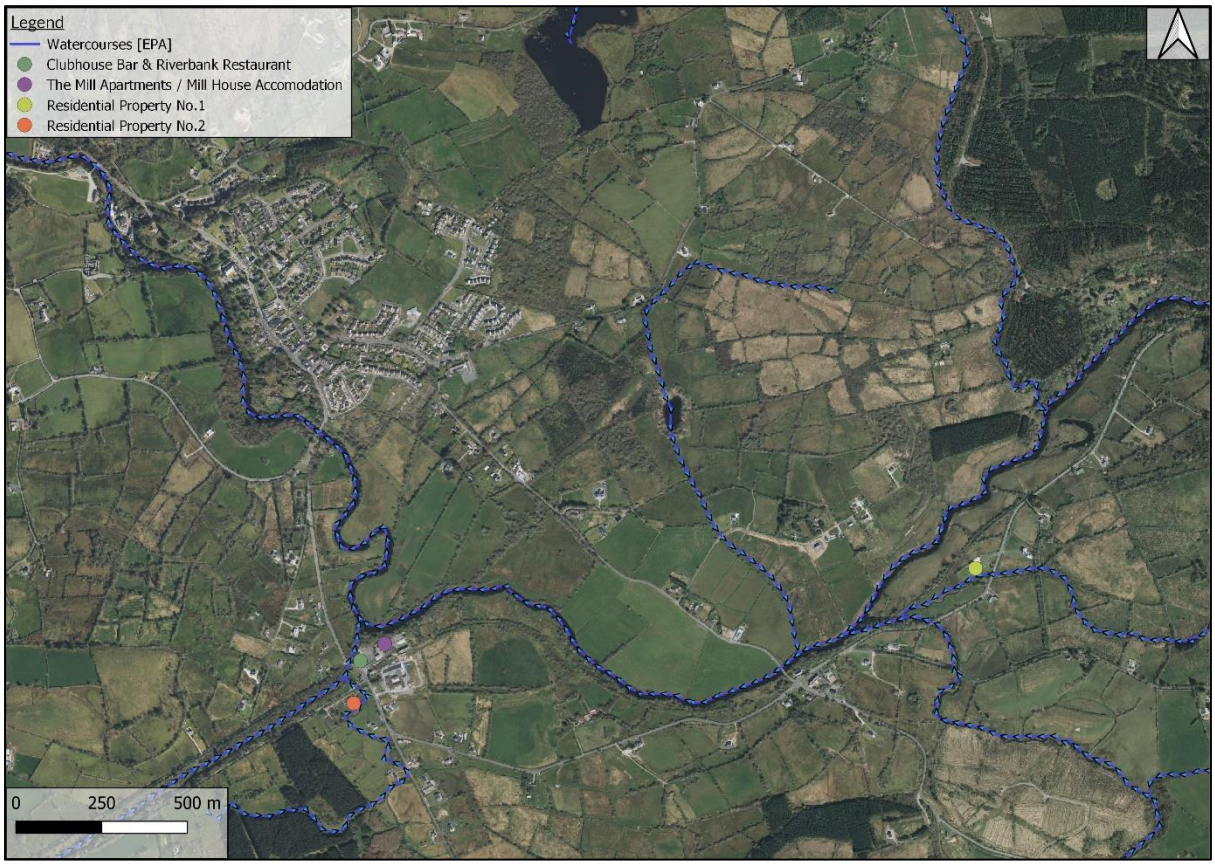


Figure 1-1: Location of Properties at Risk of Flooding

The Feasibility report then investigated a number of proposed mitigation measures that would be suitable to protect the effected properties.

The report concluded that the most feasible flood protection option was to construct flood defence structures at three locations in Dromahair Co. Leitrim. The design basis for the

proposed flood defences at each property is to construct a flood protection structure with a top-level set 300mm above the predicted 100-year MRFS maximum water level at the property boundary. The type of flood defence structure was chosen based on existing site conditions and aimed to minimise any impact on the existing sites functions.

The following flood defences are proposed at each property:

- Residential Property No. 1 – earthen embankment
- The 'Mill' Apartments – concrete flood defence wall
- The Mill Master House Accommodation – concrete flood defence wall
- The Clubhouse Bar & Riverbank Restaurant – concrete flood defence wall
- Residential Property No. 2 – earthen embankment

## 1.2 PURPOSE OF REPORT

This report presents an outline Construction & Demolition Waste Management Plan (C&DWMP) for the proposed development which will address the following:

- Analysis of the waste arisings/material surpluses;
- Waste management objectives for the project;
- Methods proposed for prevention, reuse and recycling of wastes;
- Material handling procedures; and
- Proposals for training and auditing.

This outline C&DWMP has been prepared in accordance with the Best Practice Guidelines on the Preparation of Waste Management Plans for Construction and Demolition Projects (2006)[1].

[1] Former Department of the Environment, Heritage and Local Government, Best Practice Guidelines on the Preparation of Waste Management Plans for Construction and Demolition Projects (June 2021)

# 2. PROJECT DESCRIPTION

## 2.1 SITE LOCATION

The sites which have been identified as at risk of flooding from the River Bonet are all located in, or close to the town of Dromahair, as previously shown in Figure 1-1.

## 2.2 NEED FOR THE DEVELOPMENT

In 2015, the OPW produced flood maps as part of the Catchment Flood Risk Assessment and Management (CFRAM) Study. The flood extents in these maps are based on detailed modelling of Areas for Further Assessment identified in the National Preliminary Flood Risk Assessment.

The CFRAM study identifies all of the properties as being liable to fluvial flooding, see Figure 2-1 below.

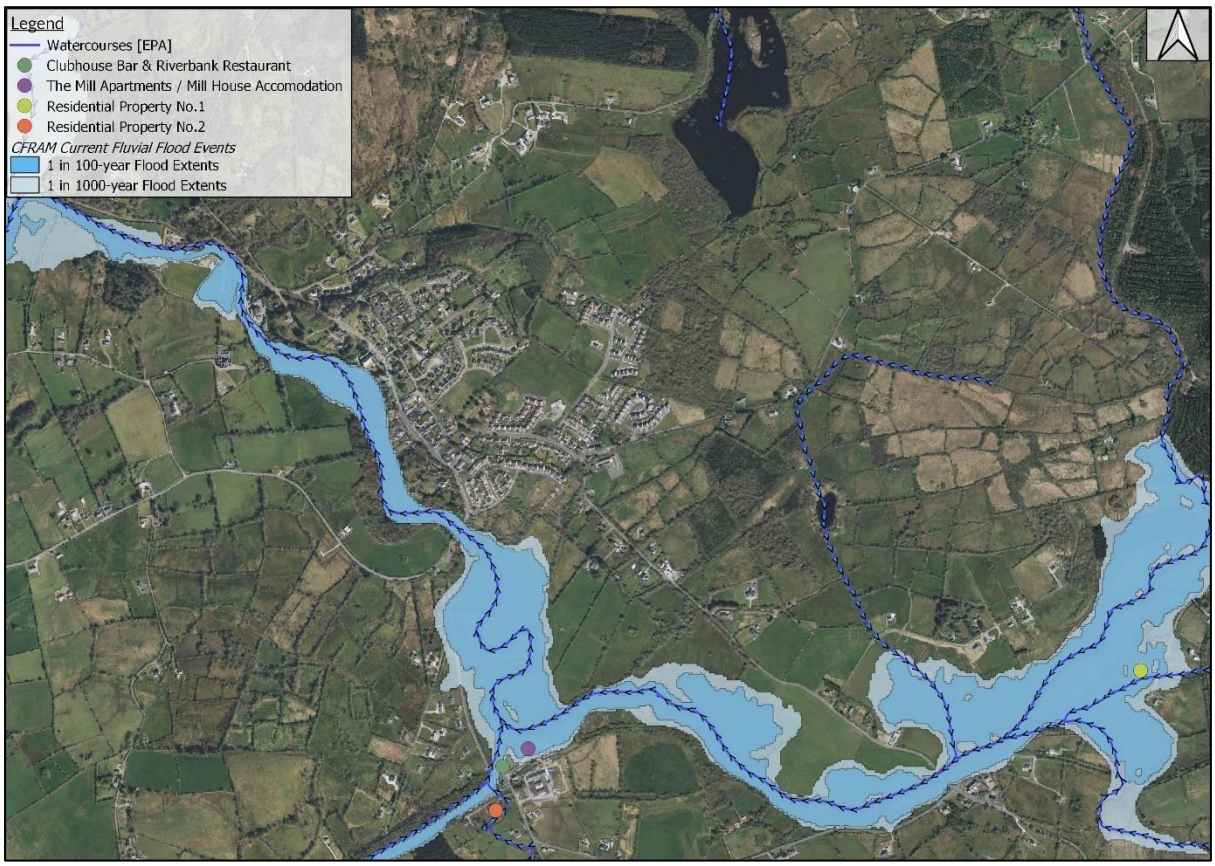


Figure 2-1: CFRAM Mapping of Dromahair

## 2.3 PROPOSED WORKS

It is proposed to construct flood defence structures at three locations in Dromahair Co. Leitrim. The design basis for the proposed flood defences at each property is to construct a flood protection structure with a top-level set 300mm above the predicted 100-year MRFS maximum water level at the property boundary. The type of flood defence structure was chosen based on existing site conditions and aimed to minimise any impact on the existing sites functions.

The following flood defences are proposed at each property:

- Residential Property No. 1 – earthen embankment

- The 'Mill' Apartments – concrete flood defence wall
- The Mill Master House Accommodation – concrete flood defence wall
- The Clubhouse Bar & Riverbank Restaurant – concrete flood defence wall
- Residential Property No. 2 – earthen embankment

### 2.3.1 Construction Activities

The following is the sequence of activities that will be undertaken during the Construction Phase of the of the proposed development:

#### *2.3.1.1 Construction Schedule*

It is anticipated that the proposed construction works will take approximately 16 weeks to complete. Normal works hours during the construction phase are expected to be Monday to Friday 08:00 to 17:00 hours. The total number of construction staff on-site will vary during the construction phase but is expected to range from three to five staff. No construction lighting will be used during construction.

#### *2.3.1.2 Traffic*

All four sites are located adjacent to the R287 regional road. This road will provide the main access route to the sites. Construction material will be transported onto site using the existing access roads. The main construction machinery on site will be an excavator, compaction rollers, crane, transport lorries, cement lorries and tractor and trailers.

Artic lorries will be used to delivery pre-cast retaining walls and rebar reinforcement for the cast in-situ wall and will be lifted into place via a crane. Concrete for the walls will be delivered using concrete lorries. Dump trucks/tipper lorries will be used to deliver embankment fill.

#### *2.3.1.3 Site Clearance*

The proposed construction works requires the removal and disturbance of earth, riverbanks and trees within the site in order to accommodate the access tracks, the instalment of walls and embankments, and facilitate the works.

Approximately five mature trees, located to the west of the Riverbank restaurant at the Mill will be removed by a competent contractor once the initial site clearance has been completed.

The existing stone wall located at the Mill along the alignment of the proposed flood defence wall, will be demolished. The stone from this wall will used as part of the construction of the flood defence wall for cladding, as per the Conservation Architects recommendations. This demolition will be carried out by a digger.

It is not envisaged that works will generate significant construction waste, such as hardcore stone, and gravel. Although every effort will be made to recycle and re-use of materials on site, some waste will require to be disposed off-site. Cement wash will occur outside the proposed sites. Any disturbed areas will be fully reinstated following the completion of the works. Excavated soil will be stored at temporary storage areas within the proposed development site.

#### *2.3.1.4 Earthworks*

Excavation works will be carried out at all four sites for the construction of embankments and retaining walls. A total of 2,789m$^3$ will be excavated from all the sites. Topsoil will be stripped and stockpiled at designated locations within each site.

Soil will be excavated to the required formation levels. Excavated soil will be stored at temporary soil storage areas within each site of the proposed development.

All excavated topsoil material will be reused within the site, where possible, for embankments. All remaining topsoil and all other excavation material will be disposed of offsite, in accordance with Waste Legislation (Waste Management Act 1996 – 2001).

Soil and other fill material arriving to site will be delivered near existing access roads and used imminently. The delivery locations will not be located near watercourses.

Embankment fill material will be added to the site excavations and compacted until a firm foundation is achieved. Embankment fill material will consist of fine-grained cohesive soil (with between 20% and 40% clay particles, and 13% to 21% moisture content for compaction) is specified for the proposed embankment. No rocks greater than 75mm in size shall be permitted in the soil.

This material will also be used as fill material to form the formation levels of the defences. The material delivered to site will be used once it arrives on site and will not require stockpiling. The excavation and fill works will be carried out with an excavator.

Invasive plant species will be removed from site and disposed of offsite in accordance with Waste Legislation (Waste Management Act 1996 – 2001). and the Invasive Species Management Plan (Appendix A) carried out for the proposed development.

#### *2.3.1.5 Fencing*

A total of 361m of fencing will be removed from Site 1 and Site 4. There will be pre-cast post and wire fencing installed at all four sites. The fencing will be installed at the base of the embankments located along site boundaries. The fence is proposed to be constructed to a height of 1.2m, using concrete posts with high tensile horizontal wire to BS EN 10244. The horizontal lines will also comprise of 2.5mm wire at approximately 150mm centres. A gap measuring a minimum of 150mm will be placed at the bottom of the fence to allow for the continued movement of mammals through the site.

#### *2.3.1.6 Flood Defence Construction*

##### 2.3.1.6.1 Embankments

Topsoil will be removed at each site and the soil will be excavated to the proposed formation levels using an excavator. The excavation site will then be filled with embankment material to the foundation and the embankment will be constructed on top of it. This will be compacted in layers using an excavator and roller until the design height is achieved. Once the level is reached, the earthen embankments will be topped off with topsoil in order to allow them to be planted with grass seed.

##### 2.3.1.6.2 Pre-cast Retaining Walls

Pre-cast retaining walls will be delivered to site and lifted into position by a crane. The base of the retaining walls will be backfilled with suitable material to insure stability.

#### 2.3.1.6.3 RC Retaining Walls

Formwork will be constructed at the formation levels to allow for the concrete to be poured. Once the formwork is in place, steel reinforcement will be added. The RC wall will then be poured in position using concrete lorries. The base of the retaining walls will be backfilled to the original ground levels with suitable material to insure stability.

#### 2.3.1.6.4 Surface Water Drainage

The existing surface water and foul water drainage systems on all the sites will remain operational during the construction phase of the project. It is proposed to construct new stormwater outfalls at all the sites to prevent ponding inside the flood defences. These outfall pipes will be constructed on the existing stormwater network lines. The outlet of the pipes will have a headwall constructed around them and they will be fitted with a non-return valve. In addition, at Residential Property No. 2 there are two drainage pipes proposed to supplement the capacity of the existing drainage infrastructure. The proposed works involves installing headwalls for the stormwater outfalls on the banks of the river at each site at various locations. These will connect into the existing surface water networks. The headwalls will be precast concrete slab (1.5m X 1.6m). A 300mm flap valve drain is incorporated into the concrete slab.

### 2.3.2 Operation Activities

The operation phase of the proposed development is expected to be characterised by the movement of the river below the embankments and reduced flooding. Any local maintenance activities on the flood defences are not expected to differ from the baseline/present conditions. The maintenance of the proposed flood alleviation scheme will be the responsibility of the Local Authority, although in terms of emergency repairs, the Local Authority would revert to the OPW. The following general measures will be required as part of the routine monitoring and maintenance. They include:

- Flood walls – Annual inspection and sealant replacement (every 5 years);
- Flap Valves (if any) – Inspection once every 5 years and replacement (every 25 years);
- Bank protection – Inspection once every 5 years and maintenance (as required);
- Tree Management – Annual inspection and maintenance (as required); and
- Debris Traps – Bi-annual inspections and maintenance (as required)

# 3. RELEVANT POLICY

## 3.1 WASTE MANAGEMENT CONTEXT

The primary legislative instrument that governs waste management in Ireland is the Waste Management Act (WMA) 1996, as amended. The WMA is a key instrument which, among others, implements the EU Waste Framework Directive (Directive 2008/98/EC) in Ireland. The WMA provides for a general duty on everyone not to hold, transport, recover or dispose of waste in a manner that causes or is likely to cause environmental pollution. The WMA also sets out the provisions for waste collection and its recovery/disposal.

Any person or contractor engaged in the commercial collection of waste is required to hold a Waste Collection Permit in accordance with the requirements of the Waste Management (Collection Permit) Regulations 2007, as amended. The National Waste Collection Permit Office (NWCPO) issues a waste collection permit to appropriate contractors.

Waste materials collected by a suitably permitted waste contractor can only be transported to appropriately permitted or licensed waste facilities. Authorisation for receiving waste materials is provided in accordance with the Waste Management (Facility Permit & Registration) Regulations 2008, as amended for waste permits and certificates of registration (COR) granted by the relevant Local Authority. Waste management authorisations granted by the Environmental Protection Agency (EPA) are issued in accordance with the Waste Management (Licensing) Regulations 2004, as amended and the Environmental Protection Agency (Industrial Emissions) (Licensing) Regulations 2013, as amended.

## 3.2 NATIONAL POLICY

Ireland's waste management policy is based on the EU waste hierarchy (Figure 3-1) and includes a range of measures across five tiers, namely, prevention/minimisation, reuse, recycling, recovery, and disposal. National waste policy is set out in the 2012 Government publication, *A Resource Opportunity: Waste Management Policy in Ireland*[2] and provides a roadmap on how Ireland will reduce its dependency on landfill by putting in place appropriate measures and approaches to reduce waste while at the same time making the most of opportunities to recover resources from waste.

[2] Former Department of Environment, Community and Local Government, A Resource Opportunity: Waste Management Policy in Ireland (July 2012)

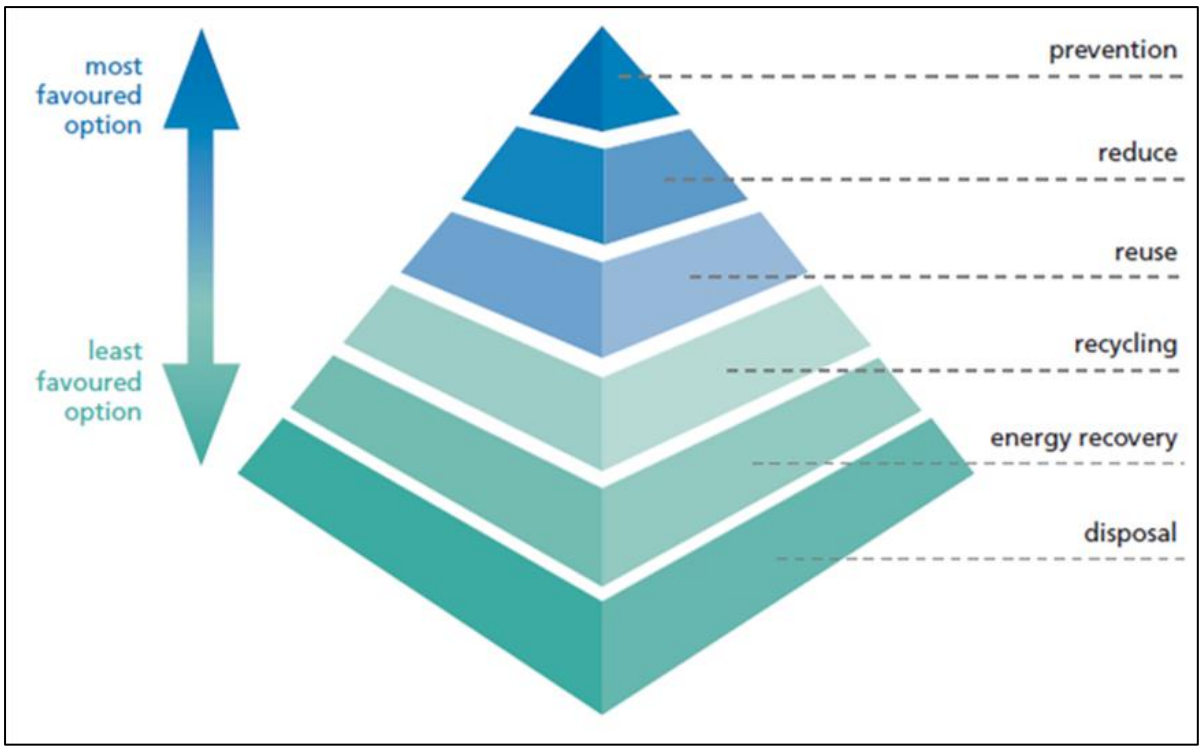


Figure 3-1: Waste Management Hierarchy (Source: EPA)

Concerning C&D waste specifically, the plan outlines that a review of producer responsibility initiatives will examine the appropriate financial mechanisms to ensure producers' compliance with their obligations. Those sectors that are generating significant waste and which do not have successful voluntary initiatives in place will be considered for specific regulation as part of the review. The document states that, in particular, specific producer responsibility requirements for construction and demolition projects over a certain threshold will be considered.

## 3.3 Regional Waste Management Plan

For waste planning purposes, Ireland has been divided into three waste regions: the Eastern-Midlands Waste Region, the Southern Waste Region, and the Connacht-Ulster Waste Region.

The Connacht-Ulster Waste Region (CUWR) comprises 9 no. local authority areas, which are outlined in Table 3.1.

Table 3.1: Local Authority areas in the CUWR

| Connacht-Ulster Waste Region | | |
|---|---|---|
| Mayo County Council | Roscommon County Council | Donegal County Council |
| Galway County Council | Sligo County Council | Cavan County Council |
| Galway City Council | Leitrim County Council | Monaghan County Council |

Each of the three waste management regions has developed a waste management plan to provide a framework for the safe and sustainable prevention and management of waste. The current waste plan for the EMR is the Connacht-Ulster Waste Region Waste Management Plan 2015-2021.

The strategic vision of the regional waste plan is to rethink Ireland's approach to managing waste by viewing waste streams as valuable material resources that can lead to a healthier environment and sustainable commercial opportunities for the economy.

The plan will also focus on the collection of quality materials, which includes C&D waste. The regional plan identifies Ireland's mandatory target under the Waste Framework Directive to prepare for reuse, recycling and other material recovery (incl. beneficial backfilling operations using waste as a substitute) of 70% by weight of C&D non-hazardous waste (excluding natural soils & stone). The latest EPA waste statistics (2020)[3] identify that Ireland's current rate is 78%.

## 3.4 Application to the Current Project

The proposed works directly align with Theme 4: Drainage and Flood Management of the Leitrim County Council Climate Adaptation Strategy. The main aim is greater understanding of risks and consequences of flooding and successful management of a co-ordinated approach to drainage and flooding.

Chapter 9 of the Leitrim County Development Plan outlines the objectives of the county for Infrastructure and Energy. Section 9.10 outlines the plannings policies for Waste management. The section highlights that the county is governed by the Connacht-Ulster Waste Region Waste Management Plan 2015-2021.

Policy WM POL 8 from the Leitrim County Development Plan is particularly relevant to the proposed works as its aim is "To encourage the recycling of construction and demolition waste and the reuse of aggregate and other materials in future construction projects." The proposed works align with this policy as it is proposed to reuse topsoil that we will be removed during the site clearance phase of the project. It is proposed that the topsoil will be stored on-site and reused to top off the embankments in order to allow them to be planted with grass seed.

[3] EPA, Progress to EU Targets (October 2022)

# 4. WASTE MANAGEMENT OBJECTIVES

The following waste management objectives are identified for the proposed development:

- Maximise the on-site segregation of demolition and construction wastes;
- Consider all reuse opportunities for material surpluses within the site;
- Avoid oversupply of incoming construction materials which have the potential to become waste; and
- Engage licensed waste contractors that can provide maximum off-site reuse, recovery and recycling of waste materials in preference of disposal.

The national target for preparing for reuse, recovery and recycling of C&D waste (excluding soil and stone) is 70% and the waste industry in Ireland is currently achieving 78%.

The target set for C&D waste management for the proposed development is 75%, which is expected to be achievable based on the construction waste types outlined in Section 5 below The main contractor will made aware of this project target and will be required to engage suitably permitted waste contractors that will provide a commitment to achieving or exceeding this target.

# 5. WASTE ARISING

C&D waste statistics from 2023 published by the EPA[4] identify the main waste types generated in the construction industry in Ireland as set out in Table 5.1.

**Table 5.1: Composition of C&D waste collected in Ireland in 2021 (Source: EPA)**

| Waste Type | Tonnage | Per cent of total |
|---|---|---|
| Soils, stones & dredging spoil | 7,696,287 | 85.1% |
| Concrete, brick, tile & gypsum | 608,235 | 6.7% |
| Mixed C&D waste | 362,380 | 4.0% |
| Metal | 257,558 | 2.8% |
| Bituminous mixtures | 87,343 | 1.0% |
| Segregated wood, glass & plastic | 31,946 | 0.4% |

As above, soil, stones and dredging spoil waste typically comprise a significant proportion of C&D waste, 85%. The proposed development will involve excavation within the site. From visual observation of the surrounding area, it is expected that this excavation will be mainly in soil. It is anticipated that some of this excavated soil shall be utilised for landscaping purposes, while the remainder of the excavation wastes shall be removed from the site.

Should any material require to be taken off site, prior to any material being removed, consultation shall be carried out with licensed landfill operators to advise that the material can be accepted as inert material facility. If required, a Waste Characterisation Assessment (WCA) may be carried out.

During construction works, outside of the excavation proposed, waste material will be generated mainly from material off-cuts and packaging. The typical waste materials generated again will be concrete rubble, metals, wood and plastics.

Other waste types generated in smaller quantities on construction sites may include waste oils, resins, paints, and adhesives. Some of these materials may be hazardous and require specific handling procedures. Small quantities of these materials are expected.

## 5.1 DEMOLITION WASTE

It is not envisaged that there will be any demolition waste arising from this development. The existing walls that are proposed for demolition will be reused as cladding for the new flood protection walls.

## 5.2 EXCAVATION WASTE

It is expected that there will be substantial quantities of excavation soil generated at the site. It is anticipated that the volume of excavation soil will be in the region of 2800 $m^3$.

[4] EPA, EPA National Waste Statistics (August 2023)

It is anticipated that some of this excavated soil (approximately 30%) will be used for landscaping purposes, while the remainder of the excavation waste will be removed from the site.

## 5.3 Construction Waste

Construction waste generated during the building of flood embankments and retaining walls includes a variety of materials such as excess soil, concrete, steel, and other construction debris. This waste can arise from over-ordering materials, off-cuts, packaging, and damaged or unused materials.

## 6. DEMOLITION MANAGEMENT

There is no demolition management required to construct the works.

# 7. WASTE HANDLING

## 7.1 ON-SITE WASTE MANAGEMENT

To ensure that waste management is given adequate consideration throughout the demolition and construction phases, the main contractor will appoint a Waste Manager who will have overall responsibility for implementing this C&DWMP, ensuring that the project remains in compliance with waste legislation and striving to achieve, and exceed, the waste management target as set out in Section 3.

As a primary measure, waste generation will be avoided, where possible, by ensuring that an excess supply of building materials is not delivered to the site and that only the minimum materials required to meet the construction schedule are available on-site. This will reduce the potential for damage and re-ordering materials, which will save on project costs. The 'Just-in-time' delivery concept will be applied, where possible, to minimise waste creation.

Maximum segregation of waste materials on-site will be carried out to increase the off-site potential for materials. It is proposed to set up a waste compound adjacent to the site and within the Contractor's construction compound. Skips of varying sizes will be provided within this compound to promote source segregation and avoid rubbish build-up and the potential for off-site littering. The waste compound shall be set up such that skips are located close together, which helps promote source segregation and aids the collection of skips by the waste contractor.

All skips will be maintained in good condition and clearly labelled so that there is no confusion as to what materials are to be placed in which skip. The main contractor will appoint an employee to keep the area around the skips clean and to ensure skips are not overflowing with waste

Waste materials such as WEEE, batteries, or hazardous waste may require covered skips or containers to prevent contaminated run-off in the event of getting wet. Dedicated bunded storage areas will be provided for liquid wastes such as resins, oils, paints, etc.

It is proposed that excavated materials shall be reused where possible within the site. Groundworks will be monitored, and environmental sampling will be conducted to classify the material for off-site recovery or disposal. Clean, uncontaminated material will be kept separate from contaminated (or potentially contaminated) materials to avoid cross-contamination and reduce the quantity of contaminated material requiring off-site treatment.

## 7.2 OFF-SITE WASTE MANAGEMENT

The Contractor will appoint a suitably permitted waste contractor(s) to collect waste from the site and transfer to appropriately permitted or licensed waste facilities. It is not possible at this point to identify who the waste contractor(s) will be or to provide their waste collection permit number(s). Similarly, the appointed waste contractor(s) will typically determine the facilities where C&D waste will be taken to. Upon appointment of a waste contractor, details of the waste collection permit(s) and chosen waste facilities will be provided to Leitrim County Council. Written confirmation of the acceptance of the material at the chosen facilities will also be obtained and provided to Leitrim County Council.

Where excavated soil and stone material requires removal off site, such materials will be tested to provide a classification for off-site recovery or disposal in accordance with the EPA

requirements set out in the Waste Classification publication[5]. Alternatively, the EPA approved *HazWasteOnline* application can be used to classify the excavated material as hazardous or non-hazardous. Waste facilities permitted for acceptance of waste materials for landfilling will also require the classification of waste in accordance with the Waste Acceptance Criteria (WAC) set out in *EC Council Decision 2003/33/EC*[6]. It is anticipated that excavated soil and stone will be transferred off-site in tipper lorries and will be covered to prevent dust deposition off-site.

Uncontaminated soil and stones can be recovered as engineering fill in landfill facilities or used for ground improvement in soil recovery facilities. As a last resort, excavated materials can be disposed of to landfill. Where appropriate, uncontaminated soil and stones may be classified as a by-product (and not as a waste) in accordance with Article 27 of the *European Communities (Waste Directive) Regulations 2011*, as amended subject to meeting specific requirements as set out in the Regulations and guidance issued by the EPA[7]. A by-product classification on the excavated materials would permit the use of the material in non-waste licenced or permitted sites.

The main construction waste materials such as concrete rubble, metals, plastics, plasterboard, glass and wood are widely recyclable and will be segregated on site into separate skips insofar as is possible with the space available on-site. These materials will be transferred off-site using dedicated skip lorries to appropriate facilities. It is anticipated that bulk concrete rubble and metals from demolition works will be transferred off-site in rigid trucks.

Any WEEE generated will be stored separately (under cover if required) and transferred to suitable facilities for processing and onward recycling of components. Similarly, where possible, cardboard packaging will be segregated to maximise recycling potential off-site.

A mixed C&D waste skip will be required for non-recyclable wastes or where site constraints do not permit segregation into all of the above waste types. The appointed Waste Manager will monitor site segregation to ensure recyclable materials are placed in dedicated skips where provided and not placed in the mixed C&D waste skip. This material will be transferred off-site for processing and further removal of recoverable materials.

Off-site facilities for processing of C&D waste typically generate a 'fines' material which can be recovered as an engineering material in landfill facilities.

Hazardous waste will only be removed from site by waste contractors permitted to handle hazardous waste. Waste oils, resins and paints may be suitable for off-site recovery, and this will be explored with waste contractors.

5 EPA, Waste Classification – List of Waste & Determining if Waste is Hazardous or Non-Hazardous (2019)
6 EC Council Decision 2003/33/EC – establishing criteria and procedures for the acceptance of waste at landfills pursuant to Article 16 of and Annex II to Directive 1999/31/EC.
7 EPA, Guidance on classification and notification of soil and stone as a by-product (2017)

# 8. RECORD KEEPING

Once a waste contractor(s) has been appointed, the Waste Manager will request copies of their waste collection permits which will be held on file at the site office. The waste collection permits must include an up-to-date list of approved vehicle registrations associated with the permit which can be spot checked by the Waste Manager. The waste contractor will also be requested to identify where waste materials will be taken to and copies of waste licences/permits for each facility will be requested to hold on file in the site office. The Waste Manager will confirm that the waste collection permits, and facility licences/permits are appropriate for the waste types proposed.

A waste log will be set up by the Waste Manager to record all outgoing waste movements from the site. The waste collection vehicle driver will be required to supply an individual signed waste docket (waster transfer form for hazardous waste) for each waste movement off-site which must specify the waste collection permit number, waste type, list of waste code, waste treatment, source of the waste and waste destination. The docket provided by the driver may also include the weight of waste where the collection vehicle is equipped with a load cell, or the weight of waste is known. Alternatively, the weight of the waste may be determined from a weighbridge at the receiving facility and the weight of waste provided to the Waste Manager as soon as possible after receipt at the off-site facility. Regardless, the waste contractor must be able to provide an accurate measurement of the waste tonnage to the Waste Manager. The waste contractor will also be required to provide feedback on waste collected identifying the percentage of waste recovered and disposed of.

The waste log will be used to identify the main waste types being generated and can be linked to delivery records to identify the percentage of waste from incoming building materials. The Waste Manager will be able to analyse these records to improve efficiency and seek to reduce wastage. The Waste Manager can also use the information to determine the success of the project against the reuse, recycle and recovery target of 75% as set out in Section 2.

# 9. TRAINING, RESPONSIBILITIES & AUDITING

The main contractor will include the waste management objectives outlined in Section 2 as part of the site induction for all new employees on the site. The importance of source segregation and maintaining a clean site will be highlighted and the locations of skips on the site will be provided.

The appointed Waste Manager will be trained in setting up the waste log and checking waste dockets as described in the previous section. The Waste Manager will also be given responsibility for providing toolbox talks on waste management, organising specific training where required and educating workers throughout the project. The Waste Manager will also liaise with Leitrim County Council to provide details on the waste facilities to be used and provide waste data as required. It is also beneficial for the Waste Manger to provide feedback on waste statistics to the project team on a regular basis to acknowledge good performance or identify areas for improvement.

The Waste Manager will be familiar with the content of this document and will ensure compliance with the measures set out herein for the duration of the project. Where appropriate on large projects, the Waste Manager may delegate responsibility to others for management of waste in particular areas of the site or may seek appointment of Waste Mangers for specific sub-contracts.

The Waste Manager will also establish an audit checklist to inspect skips and waste containers across the site and identify contamination of skips or other waste related issues which may arise. A review of waste records held for each movement of waste off-site should also be carried out. The waste log should be cross-checked with hard copy dockets and any missing details filled in. Depending on the nature of the wastes generated, the Waste Manager may also carry out an audit of the receiving waste facilities to confirm that the waste sent from the site is being treated as described on the waste dockets.

The costs associated with waste management should also be reviewed during the project and highlighted to the Project/Site Manager as to where savings can be made, if any. Typically, maximum on-site segregation of waste reduces the costs associated with mixed C&D waste collection which is required to be processed off-site.

## 10. INTERACTION WITH OTHER BODIES

The Waste Manager will ensure coordination with relevant bodies throughout the project. This will include compliance with any construction traffic management requirements identified by the project team or imposed by Leitrim County Council.

The Waste Manager will provide details to Leitrim County Council on the destinations of waste materials from the site and will provide waste records to the local authority as required. The Site Manager contact details will also be provided to Leitrim County Council.

www.tobin.ie