

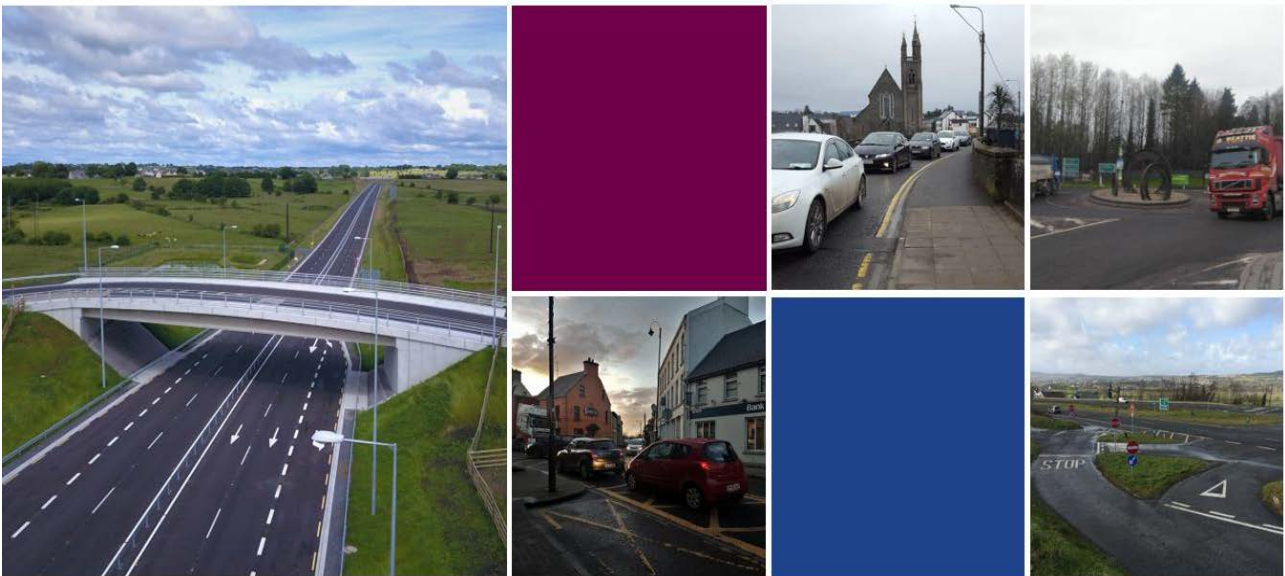
# Appendix C16.03

## Construction and Demolition Resource and Waste Management Plan

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# Construction and Demolition Resource and Waste Management Plan

## TEN-T Priority Route Improvement Project, Donegal



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**GLOSSARY OF FREQUENTLY USED TERMS**

<b>Acronym</b>	<b>Term</b>
CDRWMP	Construction & Demolition Resource and Waste Management Plan
DCC	Donegal County Council
DCCAE	Department of Communications, Climate Action and Environment
DECC	Department of the Environment, Climate and Communications
EIA	Environmental Impact Assessment
EIAR	Environmental Impact Assessment Report
EIRP	Environmental Incident Response Plan
EWC	European Waste Catalogue
HGV	Heavy Goods Vehicles
PSCS	Project Supervisor for the Construction Stage
PSDP	Project Supervisor Design Process
PTMP	Preliminary Traffic Management Plan
RAP	Reclaimed asphalt materials
SUDs	Sustainable Drainage Systems
SWMP	Surface Water Management Plan
TII	Transport Infrastructure Ireland

# SECTION 1: CONSTRUCTION & DEMOLITION RESOURCE AND WASTE MANAGEMENT PLAN

## 1.1 Introduction

Construction & Demolition Resource and Waste Management Plan (CDRWMP) has been prepared to ensure that materials and waste arising during the Construction Phase and Demolition phase of the Proposed Development, are managed in accordance with applicable legislation, national policy and best practice. The purpose of this CDRWMP is to promote the sustainable use of resources through the application of the waste hierarchy, with priority given to waste prevention, reuse, recycling and recovery.

It should be noted that this CDWMP, as outlined in this document, is equivalent to a Resource & Waste Management Plan (RWMP) as described in the EPA document '*Best Practice Guidelines for the Preparation of Resource Management Plans for Construction and Demolition Projects*' (EPA 2021a). These Guidelines outline the issues that need to be addressed at the pre-planning stage of a development all the way through to its completion and have been followed in the preparation of this report. The Guidelines reflect the shift of European waste policy from the established linear economic model to a circular economic model. These interventions focus on increasing recycling, reducing the use of virgin resources, retaining materials in the economy as long as possible, maintaining their intrinsic value/quality as high as possible and, reducing hazardous substances in products and waste.

This plan also includes information on the legislative framework and policy framework for construction and demolition waste management in Ireland.

This plan is intended to be a working document and has been prepared to be developed and implemented by the appointed contractor and will form an integral part of the Outlined Environmental Operating Plan (EOP) for the Proposed Development. This plan should be read in conjunction with the relevant chapters of the EIAR, which outline the design approach and site management requirements and procedures.

This document is preliminary in nature as it has been prepared at a stage when quantities are based on the design developed to a sufficient level of detail to inform the environmental impacts to be assessed in the Environmental Impact Assessment Report (EIAR) and Natura Impact Statement (NIS). However, changes may occur during detailed design stages which may alter the volumes of waste. Engagements with regional/national waste management officers will be held prior to commencement to identify the most optimum approach to management of resources and avoidance of waste.

## 1.2 Legislation, Plans and Policy

Resource and waste management takes place in a legislative and policy framework. Applicable legislation, policy and best practice guidance was reviewed during preparation of the CDRWMP. The key components of European Union (EU), national and local policy, legislation, and guidance relevant to proposed construction and demolition (C&D) waste are summarised as follows:

- Prevention and minimisation of waste is the preferred option;
- Where C&D waste is generated, it will be source segregated to facilitate reuse, recycling and recovery in accordance with the waste hierarchy;
- Where materials cannot be reused on-site, they will be directed to authorised recovery facilities in accordance with applicable legislation; and
- Waste may only be transferred by a waste collection permit holder and delivered to an authorised waste facility.

### 1.2.1 Legislative Context

The main legislation pertaining to waste management in Ireland and of potential relevance to the Proposed Development includes the following:

### 1.2.1.1 EU legislation

- Directive 2008/98/EC of the European Parliament and of the Council on waste (Waste Framework Directive), as amended by Directive (EU) 2025/1892 of the European Parliament and of the Council of 10 September 2025;
- Landfill Directive Council Directive 1999/31/EC on the Landfilling of Waste;
- European List of Waste, Commission Decision 2000/532/EC;
- Council Directive 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;
- WEEE Directive 2012/19/EU; and
- European Communities (Waste Directive) Regulations, 2011 (S.I. No. 126 of 2011) (as amended)
- European Union (Waste Directive) (Amendments) Regulations 2025 (S.I. No. 126 of 2025).

### 1.2.1.2 Irish legislation

- Waste Management Act 1996 (No. 10 of 1996) as amended. Subordinate and associated legislation includes:
  - Waste Management (Facility Permit and Registration) Regulations 2007 (S.I. 821 of 2007), as amended;
  - Waste Management (Collection Permit) Regulations 2007 (S.I. 820 of 2007), as amended;
  - Waste management (Licensing) Regulations 2000 (S.I. No. 185 of 2000) as amended;
  - European Union (Packaging) Regulations 2014 (S.I. No. 282 of 2014);
  - Waste Management (Planning) Regulations 1997 (S.I. 137 of 1997);
  - Waste Management (Hazardous Waste) Regulations 1998 (S.I. 163 of 1998);
  - Waste Management (Food Waste) Regulations 2009 (S.I. 508 of 2009);
  - European Union (Waste Electrical and Electronic Equipment) Regulations 2014; (WEEE) (S.I. 149 of 2014),
  - European Union (Batteries and Accumulators) Regulations 2014 (S.I. 283 of 2014);
  - Waste Management (Landfill Levy) Regulations 2015 (S.I. 189 of 2015);
  - European Communities (Transfrontier Shipment of Waste) Regulations 1994 (S.I. 121 of 1994);
  - Waste Management (Shipment of Waste) Regulations 2007 (S.I. 419 of 2007);
  - European Communities (Shipments of Hazardous Waste exclusively within Ireland) Regulations 2011 (S.I. 324 of 2011); and
  - National Waste Management Plan for a Circular Economy 2024-2030.
- Litter Pollution Act 1997, Litter Pollution Regulations 1999 (S.I. 359 of 1999) and Litter Pollution (Increased Notice Payment) Order 2007 (S.I. 558 of 2007);
- Environmental Protection Agency Act 1992 (S.I. 7 OF 1992), as amended; and
- Planning and Development Act 2000 (S.I. No. 30 of 2000), as amended.

### 1.2.1.3 Guidance

The main guidance documents used in the preparation of the CDRWMP were:

- Connacht-Ulster Waste Region (CUWR) (2016). Connacht Ulster Region Waste Management Plan;
- EU Construction & Demolition Waste Management Protocol (European Commission 2018) ;
- C&D Waste Soil and Stone Recovery / Disposal Capacity Update Report 2020 (Regional Waste Management Offices 2020);
- Circular Economy Action Plan, For a Cleaner and More Competitive Europe (European Commission 2020);
- Best Practice Guidelines for the Preparation of Resource Management Plans for Construction and Demolition Projects - Draft for Public Consultation (EPA 2021);
- The Circular Economy Programme 2021–2027 (EPA 2021b);
- Whole of Government Circular Economy Strategy 2021-2022, Pre-Consultation Draft (Department of Environment, Climate and Communications (DECC 2021); and
- Whole of Government Circular Economy Strategy 2022-2023 'Living More, Using Less' (DECC 2022).

#### 1.2.1.4 Sustainable Resource and Waste Management Principles

The principal objective of sustainable resource and waste management is to use resources more efficiently, where the value of products, material and resources is maintained in the economy for as long as possible such that 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.

The Circular Economy Action Plan, For a Cleaner and More Competitive Europe notes that:

‘the EU needs to accelerate the transition towards a regenerative growth model that gives back to the planet more than it takes, advance towards keeping its resource consumption within planetary boundaries, and therefore strive to reduce its consumption footprint and double its circular material use rate in the coming decade’ (European Commission 2020).’

However, where residual waste generation is unavoidable, it will be dealt with in a way that follows the waste hierarchy: prevention, re-use, recycling, recovering, disposal. The waste hierarchy supports the need to achieve efficient use of material resources, minimise the amount of waste produced (or otherwise increase its value as a resource) and reduce, as far as possible, the amount of waste that is disposed to landfill.

The Whole Government Circular Economy Strategy 2022–2023 (DECC 2022), sets out a policy framework for transitioning to a circular economy, including measures to reduce the circularity gap, raise awareness and support investment into circular initiatives and to identify barriers.

#### 1.2.1.5 Waste Management Target

Ireland achieved 81% material recovery of C&D waste in 2022 (EPA 2024). Under Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 on waste and repealing certain Directives and Directive (EU) 2018/851 of the European Parliament and of the Council of 30 May 2018 amending Directive 2008/98/EC on waste (hereafter referred to as the Waste Framework Directive), EU Member States must achieve 70% of material recovery of non-hazardous and non-soil-and-stone C&D waste by 2020.

The Proposed Scheme has been designed to maximise the reuse of materials on-site, including excavated soil and stone and materials arising from demolition, thereby minimising the generation of waste requiring off-site management.

In this context, the recovery targets set out above will be achieved primarily through on-site reuse of materials, in accordance with the waste hierarchy. As such, reliance on off-site waste management infrastructure is not anticipated for construction and demolition materials arising from the Proposed Scheme.

Any minor ancillary waste streams (e.g. municipal waste from site welfare facilities) will be managed by authorised waste collection permit holders and directed to appropriately authorised recovery facilities.

### 1.3 Description of the Proposed Development

Information on the Proposed Development will be included in this section of the CDRWMP. This information will assist those without detailed knowledge of the Proposed Development in quickly familiarising themselves with its key elements and will also assist those who have a need to examine, review or audit the CDRWMP.

Details will include a description of the key elements of the Proposed Development, an overview of the main works required at each section, the construction programme, construction methodology, plant and equipment requirements, details on the Construction Compounds, construction traffic management measures, and interfaces with other projects.

A full description of all proposed construction and demolition works is provided in Chapter 4: Project Description in Volume B of the EIAR.

### 1.3.1 Construction Programme

It is planned that all three sections for the of the Proposed Development will be progressed as one project, however, there may be a phased approach taken to the procurement and award of the contracts for the different sections.

It is anticipated that the construction of all three sections of the Proposed Development will be carried out in a number of stages. Each stage will include a section, which may be further divided into smaller sub-sections of road typically depending on local constraints. The associated typical construction period will vary between sections, with consideration toward varying topography and land use.

## 1.4 Roles and Responsibilities

The main contractor will appoint a suitably qualified person as C&D Waste Manager to ensure commitment, operational efficiency and accountability during the C&D phases of the project.

The Waste Manager would have overall responsibility for waste management at the site, by setting up and maintaining a waste records system for the waste generated onsite, including reuse, storage and any off-site movements where required. The waste manager will be responsible for maintaining and implementing the CDRWMP throughout the demolition, excavation, and Construction Phase of the Proposed Development. It would be the responsibility of Waste Manager to conducting a waste audit at the site during the C&D phases of the development. They will also be trained in the best methods for segregation and storage of recyclable materials, have information on the materials that can be reused on site and be knowledgeable in how to implement this CDRWMP.

The role of the Waste Manager would ensure that the opportunity is taken to educate all colleagues, site staff, including external contractors and suppliers, about alternatives to conventional construction waste disposal. The Waste Manager will be responsible for the following:

- Detailing and maintaining the CDRWMP, and updating it as appropriate;
- Following each update or revision of the CDRWMP, providing the CDRWMP to DCC, appointed contractor and all relevant personnel;
- Ensuring that all personnel are instructed about the objectives of the CDRWMP and informed of the responsibilities which fall upon them as a consequence of its provision. This will be carried out during the induction process for new personnel;
- Communicating the requirements of the CDRWMP using for example, toolbox talks, prominently displayed notices and audits as relevant;
- Implementing the CDRWMP throughout the Demolition, Excavation, and Construction Phases of the Proposed Development; and
- Ensuring, where training is required regarding the handling and management of wastes on-site, that this is provided, where required.

The appointed contractor and all personnel handling wastes must be in a position to:

- Distinguish reusable materials from material suitable for recycling;
- Ensure maximum segregation of waste and recyclables at source;
- Co-operate with the appointed contractor on best locations for stockpiling reusable material;
- Separate material for recovery; and
- Identify and liaise with operators of recovery outlets as appropriate.

Copies of CDRWMP will be made available to all relevant personnel.

### 1.4.1 Auditing

A waste audit will be carried out by the C&D Waste Manager to identify any problems with the site's resource and waste management procedures and to assess the effectiveness of prevention, minimisation and on-site reuse measures.. The audit will document details of raw material inputs and the quantity, type, and

composition of all materials arising on-site. Records will be maintained of material quantities, including those reused on-site and, where applicable, any materials transferred off-site to authorised facilities (e.g. municipal wastes). Records will demonstrate how materials are managed in accordance with the waste hierarchy, including reuse, recycling and recovery.

The audit process will identify appropriate performance and resource efficiency targets. The results of the audits will be documented in a periodic summary report which will outline the types, quantities of waste arisings and their management (including on-site reuse).

Waste management costs would also be reviewed as part of the Waste Audit.

### 1.4.2 Tracking and tracing

The appointed contractor is required to maintain records for all resource material which is used on site and leaves the Proposed Development, either for reuse, recycling, energy recovery, backfilling or other recovery.

A recording system must be put in place to record residual waste and resources generated on the Proposed Development. The system will primarily record on-site reuse of materials, together with any minor quantities of waste transferred off-site (e.g. municipal waste from site welfare facilities). The type of information to be recorded in the site tracking system is described below:

- For each movement of a resource off site, a signed docket / invoice will be obtained from the haulier / contractor detailing the following:
  - A description of the resource stream;
  - List of Waste (LoW) Code for each stream (where applicable); and
  - Validated quantity of material moved off site by the haulier / contractor (typically reported in tonnes).
- The name and authorisation of the haulier to transport the material (valid Waste Collection Permit, where required), together with the vehicle registration details.;
- The name and authorisation of the destination facility for the waste (Certificate of Registration, Waste Permit or Waste Licence, as applicable);
- The waste contractors must be required to provide details of end-use or waste treatment in waste reports;
- Recording will also be maintained for each material type reused on-site, allowing tracking of quantities and demonstrating compliance with the waste hierarchy; and
- The system will enable comparison of these figures with project targets established for the prevention, reuse and recovery.

It is the obligation of the appointed contractor or their appointed person to ensure that all resources taken off site are in line with the relevant legislation and the key area relates to ensuring that hauliers and collection sites have the appropriate authorisations.

The tracking system employed will enable the contractors to effectively measure and record the quantity of waste being generated, which allows wastage to be more readily identified. The most significant areas where waste products arise can be identified along with the percentage of new material which may be wasted.

### 1.4.3 Training

The CDWMP shall also be included in site induction training and toolbox talks, where required. All site personnel and Subcontractors will be instructed about the objectives of the plan and informed of the responsibilities that fall upon them as a consequence of its provisions. This is traditionally carried out during the induction process for new staff members. Where source segregation and material re-use techniques apply, each member of staff will be given instructions on how to comply with the CDWMP. Site notices will be designed to reinforce the key messages within the plan and will be displayed prominently for the benefit of staff.

## 1.5 Key Materials, Quantities and Cost

### 1.5.1 Introduction

C&D waste is defined as waste which arises from construction, renovation and demolition activities. Typical C&D wastes which are likely to arise during the Construction Phase of the Proposed Development are set out in Appendix C16.02 List of Waste Codes for Construction and Demolition Wastes in Volume C: Technical Appendices of the EIAR, including EPA LoW codes.

The most environmentally sustainable means of managing excavated material is its prevention and minimisation. The Appointed Contactor will be responsible for the implementation of these for the Proposed Development. In recent years there has been a shift in focus on best practice waste management and waste minimisation in construction and an increase in the reuse of construction by-products in projects.

It is expected that materials will be generated by the Proposed Development during the following activities:

- Demolition;
- Excavation; and
- Construction.

### 1.5.2 Excavated Material

Excavation works will be required for the Proposed Development. Material generated during the construction of the Proposed Development will be managed to maximise the opportunities for reuse and recycling and will also aid to minimise the potential effects of material management on the receiving environment. Circular Economy principles are to be adopted through all stages of the project to optimise the use of natural resources and recycled materials and minimising waste.

The Proposed Development has been designed to achieve an overall balance of earthworks, thereby minimising the need for import or export of materials. Uncontaminated excavated soil and stone arising on-site will be reused within the works and is not considered waste.

Material Extraction and Deposition (MED) areas have been identified within the site boundary to provide suitable material for construction and to accommodate surplus material where required. These areas form an integral part of the design strategy, enabling the reuse and management of materials on-site.

Where materials are not immediately suitable for their intended use, they will be reused for alternative engineering purposes (e.g. embankments, landscaping or backfilling) or, where necessary, processed to achieve compliance. This approach ensures that the need for off-site disposal is avoided and that materials are managed in accordance with the waste hierarchy.

It is anticipated that approximately 2.7 million m<sup>3</sup> of excavated material will be generated from Section 1 of which approximately 2.06 million m<sup>3</sup> will be reused as engineering fill (e.g. embankments), with a further circa 645,000 m<sup>3</sup> reused within the works for non-structural purposes or placed within designated deposition (MED) areas.

From Section 2 is estimated that approximately 1.91 million m<sup>3</sup> of excavated material will be generated of which approximately 1.53 million m<sup>3</sup> will be reused as engineering fill, with a further circa 384,000 m<sup>3</sup> reused within the works for non-structural purposes or placed within designated deposition (MED) areas.

From Section 3 is estimated that approximately 3.35 million m<sup>3</sup> of excavated material will be generated of which approximately 2.83 million m<sup>3</sup> will be reused as engineering fill, with a further circa 515,000 m<sup>3</sup> reused within the works for non-structural purposes or placed within designated deposition (MED) areas. All the excavated material will be re-used within the works, either in designated deposition areas or as other engineering fill within the lands made available. In so far as is possible, the surplus material will be beneficially re-used within the Proposed Development and therefore will not be considered waste. The

design of the scheme seeks to maximise the reuse of clean excavated soil and stone within the Proposed Development boundary, thereby minimising the need for off-site management.

Where temporary storage of materials is required, appropriate measures will be implemented to maintain material quality and suitability for reuse, including protection from adverse weather conditions where necessary.

For more details on earthwork activities refer to Chapter 4: Project Description of the Proposed Development in Volume B of the EIAR. Further information on waste and resource management, including estimated quantities of materials produced and lists of waste permitted and licenced facilities in the counties surrounding the project, is available in Chapter 16: Material Assets: Non-agriculture in Volume B of the EIAR. While significant opportunities for reuse and materials optimisation have been identified, the final allocation and management of materials will be confirmed by the appointed contractor at the construction stage

Other excavation waste will arise from such activities as:

- Excavation of existing carriageways, footpath etc.;
- Excavation works associated with steep slopes; and
- Excavation for utility diversions and / or protections.

The objective of the Proposed Development is to maximise the reuse of materials within and adjacent to the site, with a target of reusing 100% of suitable excavated materials. The majority of excavated material will be suitable for reuse and will be used within the works for engineering purposes, including embankments, landscaping, non-structural fill and backfilling within Material Extraction and/or Deposition (MED) areas. All materials will be subject to appropriate testing and verification to confirm their suitability for their intended use.

### 1.5.3 Demolition Waste Generation

As described in Chapter 4: Project Description of the Proposed Development in Volume B of the EIAR, it is estimated that 20 No. structures in Section 1, 17 No. structures in Section 2 and 11 No. structures in Section 3 will be demolished to allow for the construction of the Proposed Development. These structures comprise both residential and commercial buildings.

The overall estimated mass of demolished material from structures is 14,499 tonnes. The waste which will account for the vast majority of demolition waste will be classified as either inert or non-hazardous wastes, including concrete, masonry, wood and steel. In line with the project strategy, demolition materials will be segregated and, where suitable, reused within the Proposed Development for construction purposes.

Pre-demolition surveys will be undertaken to confirm the proposed methodology to be undertaken and provide sufficient detail to allow the full management of the demolition and resulting materials. Pre-demolition surveys will include appropriate hazardous materials surveys to identify all hazardous materials that may be present. Mitigation measures will be implemented during demolition to control dust, noise and vibration. A high level of reuse and recovery will be achieved for demolition materials, with inert materials prioritised for reuse on-site and other recyclable materials (e.g. metals, timber and plastics) managed in accordance with the waste hierarchy. No off-site disposal of demolition materials is anticipated, except for minor ancillary waste streams where required.

A large portion of demolition waste is expected to be inert waste such as concrete, brick and tiles etc. Metal waste will also be generated from demolition. Segregated wood, glass and plastic will also be generated.

### 1.5.3.1 Demolition Plan

A demolition plan must be prepared by the Contractor in advance for each structure to be demolished. The plan will be developed by the construction contractor and will include the following:

- Details of ground removal and/or backfilling;
- Details of the principal materials of construction and the building condition and plan for handling such materials both non-hazardous or hazardous such as asbestos and plan for disposing by licenced contractor to a licenced waste facility as required under the Waste Management Act 2006 (as amended);
- The procedures for the demolition of the building, with a detailed sequence of demolition;
- Protection and control measures; and
- Methods for the segregation, sampling and testing of demolition materials to confirm their suitability for reuse within the Proposed Development, including procedures for on-site handling, storage and tracking of materials to ensure compliance with the waste hierarchy.

The plan will also set out requirements for the handling of debris and method of waste disposal to a licensed facility as required under the Waste Management Act 2006 (as amended).

### 1.5.3.2 General Construction and Demolition Works

General construction and demolition wastes are made up of waste such as wood, packaging, metals, plastics, bricks, blocks, canteen waste, some hazardous waste, e.g. oils, paints, used tyres and adhesives. Site clearance and residual waste will be generated during the Construction Phase, primarily from the construction of the Proposed Development.

An overview of the methods to manage the primary waste streams expected is presented below. The main types of construction waste produced will be as follow.

### 1.5.3.3 Demolition Waste Generation

All material generated from the Proposed Development will be considered for re-use within the boundary of the Proposed Development. The design and construction approach seeks to maximise the reuse of materials within the Proposed Development boundary, thereby minimising the generation of waste.

Materials will be segregated on-site by type and suitability.

Demolition works will also include the removal of small sections of existing road infrastructure at tie-in locations. This will involve the removal of existing pavement layers. Materials arising from this activity will be processed on site (e.g. crushing) and reused within the Proposed Development as engineering fill, subject to compliance with the relevant regulatory criteria.

All materials will be subject to appropriate inspection, sampling and testing, where required, to confirm their suitability for reuse.

### 1.5.3.4 Construction Waste Generation

Construction works, site offices and temporary works facilities are also likely to generate waste. General construction waste can vary significantly from site to site but typically will include the following non-hazardous materials:

- Soil and stone;
- Concrete, brick, tiles and ceramics;
- Bituminous mixtures;
- Metals;
- Wood;
- Municipal type wastes generated by construction staff; and
- Other.

The hazardous waste streams which could arise from construction activities include the following:

- Waste electrical and electronic equipment (WEEE) components;
- Batteries;
- End-of-life tyres
- Spill kits;
- Liquid fuels; and
- Contaminated soil.

Surplus and damaged products and materials may arise in the course of construction works, including excess concrete and unusable or damaged pipe segments. Quantities of these materials are expected to be small and recoverable; assumed to be approximately between 5% to 15% of construction material delivered to site, as stated in the Waste and Resources Action Programme (WRAP) Builders: Estimating Waste (WRAP 2014). Such materials will be segregated and, where suitable, reused within the Proposed Development. Appropriate on-site management and segregation measures will be implemented to maximise reuse and recovery in accordance with the waste hierarchy.

#### 1.5.4 Municipal Waste Generation

Small volumes of general municipal waste will be generated by construction staff during the Construction Phase (e.g. from offices, welfare facilities, and canteen activities). This may include packaging, food waste and other non-hazardous residual materials. In addition, it is anticipated that there will be significant indirect employment supported by the Proposed Development, for example, in logistical support companies, material and plant suppliers, traffic management companies and in the local service industry. Segregation facilities will be provided on the construction site to ensure that recovery and recycling of such wastes is maximised. These waste streams will be managed by authorised waste collection permit holders and transferred to appropriately authorised recovery facilities.

#### 1.5.5 Hazardous wastes

Small quantities of hazardous waste may arise during construction activities, primarily associated with the maintenance of construction machinery (e.g. oils, fuels or lubricants) or from the use of chemicals required during construction. Any such materials will be stored, handled and disposed of in accordance with relevant waste management legislation and best practice to minimise the risk of accidental spills or contamination.

Prior to removal from the site, any hazardous waste identified will be subject to appropriate classification by a suitably qualified person in accordance with the European Waste Catalogue (List of Waste (LoW)). It should be noted that if non-hazardous waste becomes contaminated with hazardous waste, the entire load will be considered hazardous. Hazardous waste should be segregated from non-hazardous and inert materials to prevent cross-contamination. Dedicated storage areas will be provided, and appropriate handling procedures will be implemented during excavation, storage and transport.

No asbestos-containing materials have been identified within the Proposed Development, however, in the unlikely event that asbestos-containing materials are encountered during demolition works, these will be managed and removed by suitably licensed contractors in accordance with relevant health, safety and waste legislation.

Hazardous wastes cannot be reused on-site and will be transferred off-site by authorised waste collection permit holders to appropriately licensed treatment or disposal facilities. The nature of treatment will depend on the specific characteristics of the material and the results of any required testing.

##### 1.5.5.1 Hazardous liquids (oils, paints, chemicals)

Hazardous liquid waste arising from the construction process will require careful handling. Oils, paints, bitumen, adhesives and chemicals will be kept in a separate contained storage area which will be locked when not in use. Hazardous liquids will be stored at least 10m from any watercourses. Lids will be kept on containers in order to avoid spillage or waste by evaporation. Waste oils, paints and chemicals, including

the containers, will require careful handling and disposal. These will be stored in a containment tray with a capacity to contain 110% of the volume of the largest container.

Fuels and chemical will be stored in double-skinned containers or within a bund, i.e. an impervious structure with the capacity to contain 110% of the volume of the largest tank stored within it. All containers will be carefully labelled.

### 1.5.6 Food wastes

Site staff generate food waste and packaging waste. Designated receptacles will be provided to allow for the segregation and storage of individual waste streams. These will include receptacles for food waste, e.g. brown bin for waste foods and peelings, dry recyclables; e.g. green bin for packaging, plastics, metals, wood, paper, cardboard and tetrapack; and residual bin, e.g. black bin for mixed food and packaging waste. Separate receptacles for the recyclable fractions may be provided such as plastics, metals, glass and this will be designed and detailed by the waste management co-ordinator in consultation with the selected waste management contractor.

### 1.5.7 Costs of Waste Management

While landfill disposal has been the most commonly used method for waste management in Ireland in the past, waste to energy incinerators are also now in operation at Poolbeg, Dublin 4 and in Carranstown, County Meath.

Typically, the current cost of disposal of waste to landfill in Ireland exceeds €170 per tonne. From 1 July 2013, in accordance with S.I. No. 194/2013 - Waste Management (Landfill Levy) (Amendment) Regulations 2013, the '*landfill levy*' increased to €75 per tonne for waste disposed to landfill. Disposal of hazardous waste can cost from €350 per tonne.

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; and
- Revenue generated from sales.

Therefore, in order to reduce costs associated with waste management, surplus materials will be reused within the Proposed Development, and materials will be carefully stored and handled to maximise their beneficial use. No off-site disposal of construction and demolition materials is anticipated, with materials being reused on-site.

## 1.6 Site and Waste Management

### 1.6.1 Introduction

The Employer is committed to implementing the principles of sustainable resource and waste management. Waste from the Proposed Development will be managed in accordance with the principles of a circular economy and the waste hierarchy. Waste disposal will be minimised, in so far as is reasonably practicable, and opportunities for re-use of materials, will be maximised throughout the Construction Phase of the Proposed Development.

The Proposed Development has been designed to maximise the reuse of excavated materials within the site, thereby minimising the need for off-site management. As such, the management of materials will be undertaken in accordance with the design intent and the principles set out in this Plan.

## 1.6.2 Waste Management

The management of construction and demolition waste will reflect the waste management hierarchy, with waste prevention and minimisation being the first priority, followed by reuse and recycling. During site clearance and construction works, there are numerous opportunities for the beneficial re-use and recycling of materials.

The Contractor will implement this plan and manage all waste with a goal of achieving the waste hierarchy in accordance with the relevant statutory provisions. This hierarchy is echoed in the EPA's best practice guidelines for RWMPs.

### 1.6.2.1 Source Segregation

Wastes generated on the construction site will be identified and segregated according to their respective categories, as described by the European Waste Catalogue (EWC). Where possible, metal, timber, glass, and other recyclable material, which are estimated to be in small quantities, will be segregated and removed off-site to a permitted/licensed facility for recycling.

In order to achieve this, designated waste storage areas will be created at the construction compounds or other suitable locations for the storage of segregated wastes prior to transport for recovery/disposal at suitably licensed/permitted facilities. Suitably-sized containers for each waste stream will be provided within the waste storage area and will be supervised by the waste management co-ordinator, who will be appointed by the Contractor. This will be the person responsible for the management of waste during the construction of the Proposed Development. The number and sizing of containers will be agreed with Waste Contractors in advance of construction works commencing. Source segregation of waste will result in cost savings to the project as well as providing an environmentally sound route for the management of all construction and demolition wastes.

### 1.6.2.2 Re-use

Clean, non-hazardous excavated materials will be reused within the Proposed Development as fill material and in landscaping works, subject to appropriate testing to confirm suitability for their intended use.

The design and construction approach ensures that excavated materials are retained and reused on-site, thereby avoiding the need for off-site management. Materials will be managed in accordance with the waste hierarchy, with reuse as the primary outcome.

### 1.6.2.3 Material Management

In order to prevent and minimise the generation of waste, the Contractor will be required to ensure that raw materials are ordered so that the timing of delivery, the quantity delivered, and the storage is not conducive to the creation of unnecessary waste. The Contractor, in conjunction with the material suppliers, will be required to develop a programme showing the estimated delivery dates and quantities for each specific material associated with each element of construction and demolition works. Following a 'just-in-time' approach improves cash flow, better utilises storage space, reduces risk of environmental pollution events and reduces potential loss to theft and accidental damage as well as making the site safer.

The planning, construction and demolition works will be undertaken in compliance with the requirements of this CDRWMP to ensure that materials are managed in accordance with the waste hierarchy, with a primary focus on prevention and on-site reuse. The Contractor will implement measures to maximise the reuse of materials within the Proposed Development and minimise the generation of waste requiring off-site management.

The Contractor will be required to continuously seek to improve the waste management process on site during all stages of construction and maximise opportunities for re-use and recycling where they exist. In relation to ancillary waste streams (e.g. packaging), the Contractor will seek to reduce waste at source, including engagement with suppliers to minimise packaging and maximise take-back arrangements where feasible. The CDWMP will be included as an agenda item at the weekly construction meetings. In addition,

the plan will be communicated to the whole team (including the Employer) at the monthly meetings. This will include any updates to earlier versions of the document.

#### 1.6.2.4 Site Preparation

The construction of the Proposed Development will require site clearance as part of the development. Site preparation will include certain diversion works of services and utilities, such as public lighting, power services, water mains, rising main, storm water, electricity, telecommunications, gas mains and traffic light services. Due to the nature of some of the diversions, a number of these service diversions will only be possible during the main construction works.

The Contractor's CDWMP will take the following into account:

- The extent of the areas to be cleared and the potential types and volumes of arisings;
- The location of any structures to be demolished;
- Statutory requirements; and
- Specific environmental requirements and seasonal requirements.

#### 1.6.3 Waste and Recycling Targets

The Contractor's CDWMP, waste handling and proposed construction methods should endeavour to achieve the following targets.

- The re-use of earthworks materials generated on site where possible;
- 100% recycling of surplus reinforcement and other metals, where possible; and
- No contamination of skips.

#### 1.6.4 Waste and Recycling Opportunities

The Contractor will implement measures to minimise waste generation and maximise the re-use of materials on-site in accordance with the waste hierarchy through the following:

- Storing materials in designated areas and separate from wastes to prevent damage and maintain suitability for reuse;
- Returning packaging to suppliers where feasible and minimising packaging waste at source;
- Segregating construction and demolition materials to facilitate reuse within the Proposed Development;
- Reusing and recycling materials on site during construction;
- Recycling other recyclable materials through appropriately permitted/licensed contractors and facilities; and
- Managing any residual or hazardous waste in accordance with relevant legislation and the waste hierarchy.

### 1.7 Scheme Infrastructure

#### 1.7.1 Site Offices, Construction Compounds

Construction Compound requirements to facilitate the Construction Phase of the Proposed Development are illustrated in Chapter 4: Project Description of the Proposed Development of this EIAR. For each section, construction compounds will be required during the construction phase to provide office and welfare facilities for site staff. The construction compounds will also provide facilities for material storage, laydown and maintenance of construction plant, and possibly material testing. An office for the Employer's Representative and assistant staff will also be located within the construction compound.

Potential construction compound locations have been proposed at locations where they can be accessed from the existing National or Regional Road networks as presented in Table 1-1.

**Table 1-1 Potential Construction Compound Locations**

Name	Location	Approximate Chainage	Approx. Site Area (ha)
Section 1	Cappry	Mainline 1.2 Ch. 1+450 – 1+93 m	5.37
Section 1	Treanamullin	N15 Primary Road Connector Ch. 2+520 – 2+800 m	1.55
Section 2	Lurgy	L-1064 Connector Ch. 0+250 – 0+650 m	4.65
Section 2	South of Proposed Bonagee Junction	Bonagee Link Ch. 0+300 – 0+350 m	0.5
Section 3	Pluck	Mainline 0+000m – 0+300 m	2.7
Section 3	R236	Mainline 7+900 m	1.6

Construction compounds will only be in place during the Construction Phase of the project. The construction compounds will contain a site office, and welfare facilities for employer personnel and appointed contractor personnel. Limited car parking will be allowed at the construction compounds. Materials such as topsoil, subsoil, concrete, rock etc., will be stored at the construction compounds for reuse purpose. Items of plant and equipment will also be stored within the construction compounds.

### 1.7.2 Waste Collection and Transportation

The off-site collection and transportation of waste from the Proposed Development will be limited to minor ancillary waste streams (e.g. municipal waste) and hazardous waste, where applicable. Such waste from the Proposed Development will be transported by authorised waste collectors in accordance with S.I. No. 820 of 2007 - Waste Management (Collection Permit) Regulations 2007, as amended, and delivered to suitably authorised recovery or disposal facilities.

Records of authorised waste collectors and relevant permits will be maintained on site by the Contractor.

#### 1.7.2.1 Hazardous Wastes

Where hazardous waste is generated, it will be segregated, stored and transported in accordance with relevant legislation. Appropriate waste transfer documentation will be maintained, and all movements will be undertaken by authorised contractors to appropriately licensed facilities.

The following steps must be taken where hazardous waste is being transported from the Proposed Development to a hazardous waste recovery or disposal facility within Ireland:

- Waste transfer forms shall be obtained by the waste producer from the local authority website, and completed online before the waste is collected;
- A copy shall be downloaded, printed and signed, accompanying the consignment of hazardous waste when it is in transit; and
- On the load's arrival, the operator of the recipient disposal or recovery facility shall log-in and complete the relevant details documenting the receipt of the waste.

Export of hazardous waste from the Proposed Development outside of Ireland is subject to a Europe-wide control system founded on Regulation (EC) No 1013/2006 of the European Parliament and of the Council of 14 June 2006 on shipments of waste (known as the Transfrontier Shipment Regulations), as amended. This legislation is supplemented by S.I. No. 419/2007 - Waste Management (Shipments of Waste) Regulations 2007, as amended, which makes DCC responsible for the enforcement of this regulatory system throughout Ireland. Export of hazardous waste from the Proposed Development outside Ireland should comply with the procedures set out in this legislation.

## 1.8 References

A Waste Action Plan for a Circular Economy, Ireland's National Waste Policy 2020-2025 (Department of Communications, Climate Action and Environment (DCCAE 2020)

Best Practice Guidelines for the Preparation of Resource Management Plans for Construction and Demolition Projects – Draft for Public Consultation (EPA 2021)

Circular Economy Action Plan, For a Cleaner and More Competitive Europe (European Commission 2020)

C&D Waste Soil and Stone Recovery / Disposal Capacity Update Report 2020 (Regional Waste Management Offices 2020)

EU Construction & Demolition Waste Management Protocol (European Commission 2018)

The Department of the Environment, Community and Local Government publication, 'A Resource Opportunity, Waste Management Policy in Ireland' (July 2012)

The Eastern Midlands Region Waste Management Plan 2015-2021 (Eastern Midlands Waste Region 2015)

Whole of Government Circular Economy Strategy 2021-2022, Pre-Consultation Draft (Department of Environment, Climate and Communications (DECC 2021); and Circular Economy Act 2021

### Directives and Legislation

Article 27 of the Waste Directive Regulations 2020 (S.I. 323 of 2020)

Environmental Protection Agency Act 1992 (S.I. 7 OF 1992) as amended

European Communities (Waste Directive) Regulations, 2011 (as amended)

European Communities (Shipments of Hazardous Waste exclusively within Ireland) Regulations 2011 (S.I. 324 of 2011)

European Communities (Transfrontier Shipment of Waste) Regulations 1994 (S.I. 121 of 1994)

European List of Waste, Commission Decision 2000/532/EC

European Union (Batteries and Accumulators) Regulations 2014 (S.I. 283 of 2014)

European Union (Packaging) Regulations 2014 (S.I. No. 282 of 2014)

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

Landfill Directive Council Directive 1999/31/EC on the Landfilling of Waste Council Directive 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

Litter Pollution Act 1997, Litter Pollution Regulations 1999 (S.I. 359 of 1999) and Litter Pollution (Increased Notice Payment) Order 2007 (S.I. 558 of 2007)

Local Government Ireland National Waste Management Plan for a Circular Economy 2024-2030

Planning and Development Act 2000 (S.I. No. 30 of 2000) as amended

Waste Framework Directive 2008/98/EC

Waste Management Act 1996 (No. 10 of 1996) as amended. Subordinate and associated legislation include:

Waste Management (Collection Permit) Regulations 2007 (S.I. 820 of 2007) as amended

Waste Management (Facility Permit and Registration) Regulations 2007 (S.I. 821 of 2007) as amended

Waste Management (Food Waste) Regulations 2009 (S.I. 508 of 2009)

Waste Management (Hazardous Waste) Regulations 1998 (S.I. 163 of 1998)

Waste Management (Landfill Levy) Regulations 2015 (S.I. 189 of 2015)

Waste management (Licensing) Regulations 2000 (S.I. No. 185 of 2000) as amended

Waste Management (Planning) Regulations 1997 (S.I. 137 of 1997)

Waste Management (Shipment of Waste) Regulations 2007 (S.I. 419 of 2007)

WEEE Directive 2012/19/EU