17 WASTE

17.1 Introduction

This Chapter assesses the waste management aspect of the Proposed Scheme. It discusses the potential waste streams that will be generated during the construction and operation of the Proposed Scheme. The potential effects from the forecast waste generation are assessed in the context of the effects on waste management infrastructure and legislation, policy, and strategy targets. Mitigation measures are proposed where the potential for significant effects have been identified.

17.2 Assessment Methodology

A quantitative assessment of potential effects in relation to waste have been undertaken. The assessment comprised the following stages:

- A review of applicable legislation and guidance;
- A review of the Proposed Scheme design to estimate the waste generation during the various phases of construction;
- Determining waste arisings during construction and from the regeneration scheme once operational;
- Consideration of potential interactions between proposals and the current site conditions;
- Identification of possible significant effects;
- Assessment of effects;
- Identification of measures and solutions to avoid, reduce or remedy potential impacts; and,
- Assessment of residual impacts, taking account of mitigation measures.

17.2.1 Study Area

The study area comprises the Proposed Scheme location in Burnfoot, Co. Donegal in the Republic of Ireland as outlined in Chapter 1 of the EIAR. The desk study considered the impact on waste management capacities in the Connacht-Ulster region and the Republic of Ireland.

17.2.2 Baseline

Baseline studies comprised a review of current waste management capacity in the Connacht Ulster Region using the Construction and Demolition Waste Soil and Stone Recovery / Disposal Capacity (2020) and Environmental Protection Agency (EPA) non-hazardous landfill sites permits.

17.2.3 Legislation and Guidance

An extensive document review was completed to assist in identifying current and future requirements for waste management which included applicable waste and environmental European Directives, National Regulations, National Policies and Strategies.

17.2.3.1 Definition of Waste

Waste is legally defined in EU and Irish law as “any substance or object which the holder discards or intends or is required to discard” under the Waste Framework Directive (European Directive 2006/12/EC as amended by Directive 2008/98/EC). Once a substance has become waste it will remain waste until it has been fully recovered and no longer poses a potential risk to the environment or human health.

From that moment onwards, the material ceases to be waste and it is no longer subject to the controls of the Waste Framework Directive. The principal objective of sustainable resource and waste management is to use material resources more efficiently, where the value of products, materials and resources are maintained in the economy for as long as possible 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, Figure 17.1.

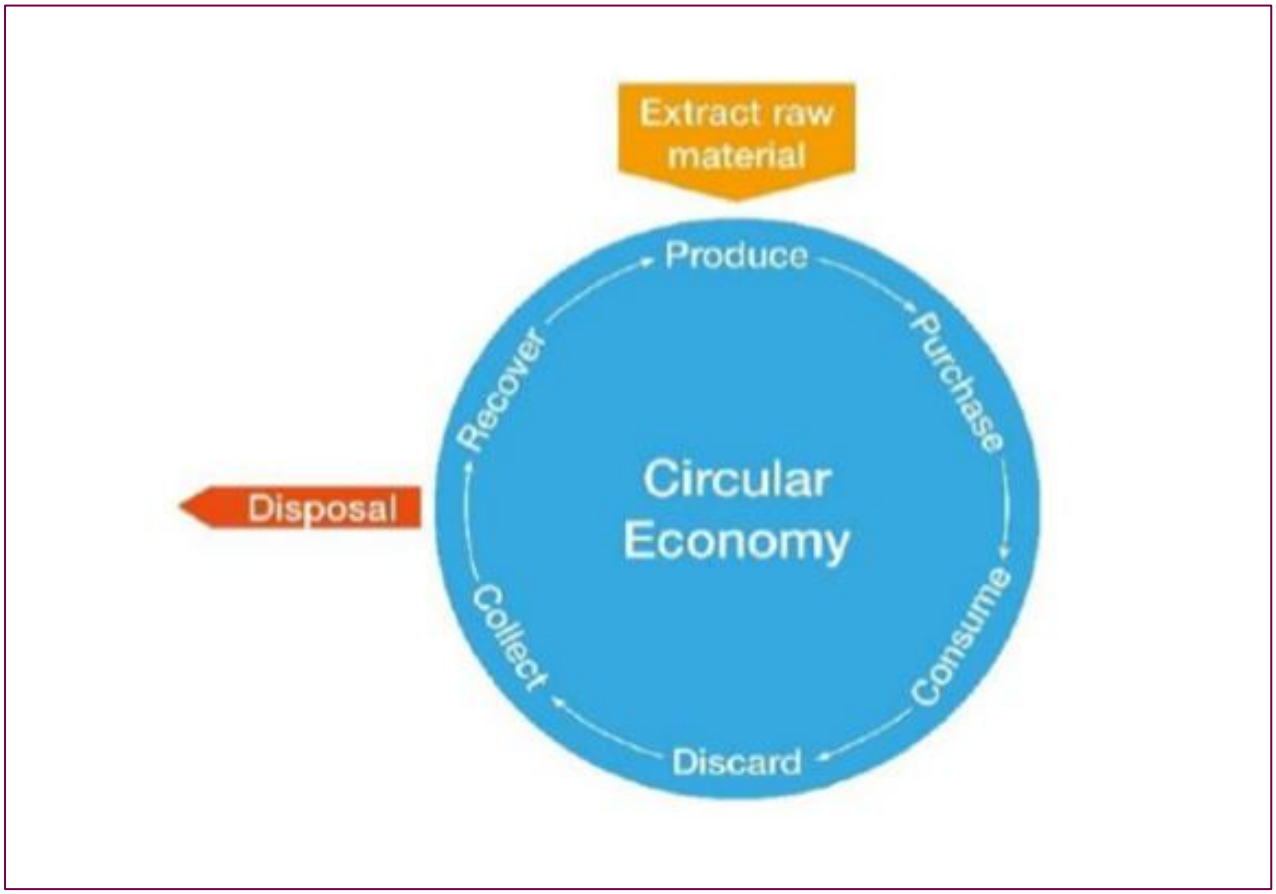

Figure 17.1: Circular Economy Approach

Most of the waste generated from the Proposed Scheme works will be classified as construction and demolition waste (CDW). CDW is not clearly defined in Irish legislation, however a number of official documents provide a definition for CDW as follows:

The Department of the Environment, Community and Local Government in 2006 defined CDW as waste which arises from construction, renovation, and demolition activities, together with all waste categories mentioned in Chapter 17 of the European Waste Catalogue (EWC). Also included within the definition are surplus and damaged products and materials arising in the course of construction work or used temporarily during the course of on-site activities.

The EPA adopted a broad definition of CDW (in line with the opening part of the definition of CDW as set out in Article 1(4) of Commission Decision 2011/753/EU12) as all waste that arises from construction and demolition activities (including excavated soil from contaminated sites). These wastes are listed in Chapter 17 of the European Waste Catalogue (EWC).

The definitions in Ireland for CDW do not provide any clear distinction between waste originating from construction or demolition.

The EU and Irish definitions of re-use, recycling and recovery may be stated as follows:

- Reuse is defined as *"any operation by which products or components that are not waste are used again for the same purpose for which they were conceived."*
- Recycling is defined *"as any recovery operation by which waste materials are reprocessed into products, materials, or substances whether for the original or other purposes. It includes the reprocessing of organic material but does not include energy recovery and the reprocessing into materials that are to be used as fuels or for backfilling operations."*
- Recovery is defined as:

  "(a) any operation the principal result of which is waste serving a useful purpose by replacing other materials which would otherwise have been used to fulfil a particular function, or waste being prepared to fulfil that function, in the plant or in the wider economy, and

  (b) without prejudice to the generality of paragraph (a), includes the recovery operations listed in the Fourth Schedule,"

  Ireland follows the definition provided in the European Commission Decision of 18 November 2011 and Eurostat guidance on backfilling. Backfilling was defined by the European Commission Decision of 18 November 2011 as:

  "…a recovery operation where suitable waste is used for reclamation purposes in excavated areas or for engineering purposes in landscaping and where the waste is a substitute for non-waste materials."

This definition applies in Ireland but there has been no official translation into Irish law.

17.2.3.2 European Union Legislative Review

The EU influences the implementation and delivery of waste management and legislation in Ireland.

- *Directive (EU) 2018/851 of the European Parliament and of the Council of 30 May 2018 amending Directive 2008/98/EC on waste* - the basic concepts related to waste management, such as definitions of waste, recycling, and recovery. The Directive explains when waste ceases to be waste and becomes a secondary raw material, and how to distinguish between waste and by-products. The Directive outlines the requirement that waste be managed without endangering human health and harming the environment. The Directive introduces the "polluter pays principle" and the "extended producer responsibility". It incorporates provisions on hazardous waste and includes recycling and recovery targets to be achieved by 2020. Article 4 sets out the waste hierarchy which prioritises waste

management options to reduce and manage waste ranking from waste avoidance, as the preferred option, followed by resource recovery and as a final option, safe disposal of waste.

- *2000/532/EC: Commission Decision of 3 May 2000 replacing Decision 94/3/EC establishing a list of wastes pursuant to Article 1(a) of Council Directive 75/442/EEC on waste and Council Decision 94/904/EC establishing a list of hazardous waste pursuant to Article 1(4) of Council Directive 91/689/EEC on hazardous waste* - the Directive seeks to provide a clear and concise definition of hazardous waste while also setting out the requirements for the management and permitting of hazardous waste recovery and disposal facilities.
- *Directive (EU) 2018/850 of the European Parliament and of the Council of 30 May 2018 amending Directive 1999/31/EC on the landfill of waste* - sets out the technical standards that all landfill disposal sites must meet in the future in terms of improved and consistent operation and ensuring environmental protection. It is intended to prevent or reduce the adverse effects of the landfilling of waste on the environment, in particular on surface water, groundwater, soil, air and human health.
- *Directive 2012/19/EU of the European Parliament and of the Council of 4 July 2012 on waste electrical and electronic equipment (WEEE)* - aims to increase recovery rates for waste/scrap items, and to reduce the quantities of this waste stream consigned to landfill. Producers of WEEE are responsible for the recovery of End-of-life equipment deemed a priority waste by the EU.
- *Directive 2004/35/CE of the European Parliament and of the Council of 21 April 2004 on environmental liability with regard to the prevention and remedying of environmental damage)* - The purpose of the Directive is to establish a framework of environmental liability based on the ‘polluter-pays' principle, to prevent and remedy environmental damage. It is aimed at preventing environmental damage by forcing industrial polluters to pay prevention and remediation costs.
- *Circular Economy Package* - The European Commission adopted an ambitious Circular Economy Package consisting of an EU Action Plan for the Circular Economy. The package covers the full economic cycle, not just waste reduction targets. It includes revised legislative proposals on waste, and indicators and incentives to business and consumers to help stimulate Europe's transition towards a circular economy. These include:
    - A common EU target for recycling 65% of municipal waste by 2035;
    - A common EU target for recycling 70% of packaging waste by 2030;
    - A binding landfill target to reduce landfill to maximum of 10% of municipal waste by 2035.

EU Technical Guidance on Climate Proofing of Infrastructure for the period 2021-2027 - Provides technical guidance on climate proofing of infrastructure from 2021 to 2027 based on lessons learnt from major projects over the period from 2014 to 2020 and incorporates project cycle management (PCM), EIA and Strategic Environmental Assessment processes. Climate proofing integrates climate change mitigation and adaptation measures into the development of infrastructure projects and enables institutional and private investors to make informed decisions on projects that qualify as compatible with the Paris Agreement. The process is divided into

two pillars (mitigation, adaptation) and two phases (screening, detailed analysis). The guidance includes an updated carbon footprint methodology and assessment of the shadow cost of carbon.

17.2.3.3 National Legislative Review

The overarching legislative instruments governing waste management in Ireland are as follows:

- Waste Management Act 1996 (S. I. No. 10 of 1996) as amended by the Waste Management (Amendment) Act 2001.

Sub-ordinate legislation includes:

- European Communities (Waste Directive) Regulations 2011 (S. I. 126 of 2011) as amended 2011 (S. I. No. 323 of 2011);
- EC Commission Decision (2014/955/EC) and associated Commission Regulation No. 1357/2014 as detailed in the EPA document List of Waste & Determining if Waste is Hazardous or Non-Hazardous;
- European Union (Properties of Waste which render it Hazardous) Regulations 2015;
- EC Classification, Labelling & Packaging Regulations (No. 1272/2008)
- Waste Management (Collection Permit) Regulations S. I. No. 820 of 2007 as amended 2008 (S. I. No. 87 of 2008);
- Waste Management (Facility Permit and Registration) Regulations 2007, (S.I No. 821 of 2007) as amended
- Waste Management (Landfill Levy) Regulations 2015 (S.I. No. 189 of 2015)
- Waste Management (Facility Permit and Registration) Regulations, S.I No. 821 of 2007 as amended 2008 (S.I No.86 of 2008) as amended 2014 (S.I No. 320 and No. 546 of 2014) and as amended 2015 (S. I. No. 198 of 2015)
- Waste Management (Licensing) Regulations 2000 (S. I. No. 185 of 2000) as amended 2004 (S. I. No. 395 of 2004), 2010 and (S. I. No. 350 of 2010);
- Waste Management (Packaging) Regulations 2003 (S. I. No. 61 of 2003) as amended 2004 (S. I. No. 871 of 2004), 2006 (S. I. No. 308 of 2006) and 2007 (S. I. No. 798 of 2007);
- Waste Management (Planning) Regulations 1997 (S. I. No. 137 of 1997);
- Waste Management (Hazardous Waste) Regulations, 1998 (S.I. No. 163 of 1998) as amended;
- Waste Management (Shipments of Waste) Regulations, 2007 (S.I. No. 419 of 2007) as amended;
- Waste Management (Movement of Hazardous Waste) Regulations, 1998 (S.I. No. 147 of 1998);
- Environmental Protection Act 1992 (No. 7 of 1992) as amended;
- Litter Pollution Act 1997 (No. 12 of 1997) as amended;
- Planning and Development Act 2000 (No. 30 of 2000) as amended.

17.2.3.4 Waste Management Policy

An extensive document review was completed to assist in identifying current and future requirements for waste management which included:

National and Regional Policies and Strategies such as:

- Waste Management Act 1996 (as amended);
- Changing Our Ways; A Policy Statement on Waste Management, Department of Environment, Heritage, and Local Government, 1998;
- Preventing and Recycling Waste – Delivering Change, Department of Environment, Heritage, and Local Government, 2002;
- Taking Stock and Moving Forward, Department of Environment, Heritage, and Local Government, 2004;
- National Strategy on Biodegradable Waste, Department of Environment, Heritage, and Local Government, 2006;
- A Resource Opportunity – Waste Management Policy in Ireland, Department of the Environment, Community and Local Government (DoECLG), 2012;
- National Hazardous Waste Management Plan 2021-2027 (EPA, 2021);
- Planning guidelines for future developments published by the DECLG;
- Connacht-Ulster Region Waste Management Plan 2015-2021;
- A Waste Action Plan for a Circular Economy – Ireland's National Waste Policy 2020 – 2025;
- National Waste Management Plan 2024-2030
- Green Public Procurement – Guidance for the Public Sector (EPA, 2021).

17.2.3.5 Irish Legislation that impacts CDW Management

CDW is subject to a number of legislative requirements including the movement of waste, and management via authorised waste facilities.

Movement of Waste: Subject to minor exceptions, Section 34 of the Waste Management Act requires all bodies involved in the collection of waste to have this activity authorised by a waste collection permit. Besides the legal obligation to be in possession of a permit, the holder has to abide by its conditions. For example, these may limit collection activities to certain types of waste or require the permit holders to use specified tiers of the Waste Hierarchy. The details of the waste collection permit system are set down in the Waste Management (Collection Permit) Regulations S.I. No. 820 of 2007 27, S.I. No. 87 of 2008 28 and S.I. No. 197 of 201529. Offaly County Council has been appointed as the National Waste Collection Permit Office (NWCPO).

Authorisation of Waste Facilities: The Waste Management Act contains a hierarchy of control systems, with the most stringent of these being licensed by the EPA. Local authorities are required for the regulation of non-disposal waste sites below specified thresholds (small scale and with a low degree of environmental

significance). Because local authorities operate their own infrastructure, the EPA is mandated to oversee such activities. The following type of authorisations apply to waste management facilities in Ireland:

a. **Industrial Emissions Licences:** Directive 2010/75/EC of the European Parliament and of the Council of 24 November 2010 on industrial emissions (integrated pollution prevention and control) was transposed in Ireland by the European Union (Industrial Emissions) Regulations 2013, S.I. 138 of 2013 and Environmental Protection Agency (Industrial Emissions) (Licensing) Regulations 2013, S.I. 137 of 2013. These regulations place a number of additional waste activities under the EPA licensing regime for the first time such as biological or thermal treatment facilities above a certain threshold. These regulations have limited impact on CDW treatment.

b. **Waste Licences:** The waste licensing system is operated by the EPA and is the main waste authorisation issued for major facilities in Ireland. This system provides for high environmental standards to apply for the development, operation, closure, and aftercare of such sites. The Waste Management Act and the Waste Management (Licensing) Regulations 2004 govern the process under which the licences are applied for and maintained. CDW facilities that are managed by this regime include: landfills and materials reclamation facilities that handle more than 50,000 tonnes of non-hazardous waste.

c. **Waste facility permits and Certificates of Registration** are issued by local authorities under the under the Waste Management (Facility Permit and Registration) Regulations, S.I. No. 821 of 2007 (as amended) 3132. CDW facilities falling under the permit regime include places where concrete and brick crushers are being operated to recover up-to 50,000 tonnes per year of inert CDW and materials reclamation facilities (e.g., processing pre-treatment activity or backfilling activity) that handle less than 50,000 tonnes of non-hazardous waste. Certificates of registration are used for small scale CDW recovery activities processing less than 10,000 tonnes and generating less than 15% of residual waste. The revised facility permit and certificate of registration regulations introduced clear classes of activity, for the pre-treatment and backfilling of CDW, enabling operators to apply for an appropriate waste authorisation with more certainty. The previous regulations did not specify the type of and scale of recovery activities requiring a permit and were open to interpretation, particularly for CDW recovery activities. This uncertainty has been addressed with more CDW activities receiving a facility permit or certificate of registration, rather than a waste license. In this regard, Article 11 of S.I. No. 821 of 2007 introduced a process whereby the Environmental Protection Agency is designated as the responsible body for determining whether a particular activity requires a waste licence, a waste facility permit, a Certificate of Registration or none of these. Such determinations may be made by the EPA having regard to the following:

    - Following a request made by a prospective applicant for a waste authorisation for a decision on the type of waste authorisation that applies to the proposed facility/activity;
    - Following a request made by a local authority to whom an application for a waste facility permit or a Certificate of Registration has been made; and
    - On its own initiative in relation to an existing facility.

17.2.3.6 National Waste Policy in Ireland

The statutory basis for waste management policy in Ireland comes from the Waste Management Act 1996. This Act provided the framework for the then Government's 1998 Policy Statement entitled "Waste Management: Changing Our Ways". This document outlined national targets and plans to modernise waste management practice over a 15-year period. A key concept of the Policy Statement was the Hierarchy of Waste Management, whereby waste prevention and re-use is preferable to non-sustainable practices such as disposal to landfill.

In Ireland, the Department of the Environment, Climate and Communications has divided the responsibility for waste regulation between the EPA and the local authorities. With respect to waste management planning, the EPA manages hazardous waste nationally while the responsibility for non-hazardous waste facilities lies with the local authorities.

Since the 1996 Waste Management Act, waste management planning of non-hazardous waste has been the responsibility of the local authorities. Section 22 of the Act allowed local authorities to amalgamate their waste management planning duties at their discretion. As a result, prior to 2013, there were 10 groupings of local authorities nationally. Subsequent reform of local Government structures in 2014 reduced the number of groupings further from ten to three, which are as follows; Eastern & Midlands, Southern and Connacht & Ulster.

The Circular Economy legislative package came into force from July 2018. This legislation provided amendments to The Waste Framework Directive (2008/98/EC) - Directive (EU) 2018/851; to improve the efficiency of Member States waste management systems, with focus on ensuring the efficiency of resource use and the value of waste as a resource. The Landfilling Directive (1993/31/EC) amendment Directive (EU) 2018/850 requires Member States to reduce waste disposal by landfilling; waste suitable for recycling or other recovery will not be permitted for landfill disposal.

The Waste Action Plan for a Circular Economy 2020 – 2025 (Department of Communications, Climate Action and Environment, 2020) presents a roadmap to embrace the circular economy. It promotes the focus on the following objectives: avoiding waste disposal; producer responsibility; sustainable economic models; a collaborative approach with other sectors & regulatory bodies and a strengthened role for Local Authorities).

Key focus of CDW is the prevention of soil arisings by placing value on the used material where possible, focus on end-of-waste decision making process (Article 47), incentivisation of the use of recycled construction, national end-of-waste decisions for specific construction and demolition waste streams and the revision of the 2006 Best Practice Guidelines for construction and demolition waste.

The National Waste Management Plan for a Circular Economy 2024-2030 (Local Government, 2024) has been published and replaces the Regional Waste Management Plans.

The Plan sets out a framework for the prevention and management of waste in Ireland for the period 2024 to 2030. This Plan recognises Climate Change as a key driver for both behavioural change and improved waste management practices. The Plan will be evaluated annually for climate impact and annual work plans will be adapted to respond to the climate challenge.

The ambition of this Plan is 0% total waste growth per person over the life of the Plan with an emphasis on non-household wastes including waste from commercial activities and the construction and demolition sector. This ambition is underpinned with a comprehensive series of targets, policies, actions and a suite of key deliverables.

The Department of the Environment, Climate and Communications (DECC) published the 'Climate Action Plan 2025'. The Plan states that waste emissions in Ireland fell 9.4% in 2023 from 2018 figures and are projected to fall 27% by 2030. The key policy tools which have been successful in Ireland are:

- Levies on landfill, certain forms of recovery and diversion regulations, including narrowing the scope for derogations.
- Widespread segregation of waste, capturing recyclables and biodegradable waste;
- Industry-supported recycling operations.
- Regional waste planning.

The Plan notes that in order to achieve the climate change targets, all these areas need improvement, particularly developing better prevention strategies; improving capture rates; and reducing both contamination and the amount of non-recyclable materials. In order to achieve the improvements required a number of waste-related measures in the Waste Action Plan for a Circular Economy (Department of Communications, Climate Action and Environment, 2020) are being given regulatory effect and there is an action to ensure adequate support the implementation of the second Whole of Government Circular Economy Strategy.

The 'Best Practice Guidelines for the Preparation of Resource & Waste Management Plans for Construction & Demolition Projects' was updated in 2021 by the EPA. The Guidance is a practical approach for preparing Resource and Waste Management Plans (RWMPs) and focuses on designing out waste, green procurement, circular design, and construction principles in line with the EU Circular Economy Action Plan under the EU Green Deal.

17.2.3.7 Regional Level Policy

The Proposed Scheme is located in the Local Authority area of Donegal County Council.

Connacht Ulster Regional Waste Management Plan 2015-2021

Under Article 28 of the Waste Framework Directive, Member States are required to produce regional or local waste management plans. Burnfoot is located within the Connaught-Ulster region and is therefore subject to the requirements of the Connacht Ulster Regional Waste Management Plan 2015-2021. The plan set long term targets to:

Achieve a recycling rate of 50% of managed municipal waste by 2020;

Reduce to 0% the direct disposal of unprocessed residual municipal waste to landfill (from 2016 onwards) in favour of higher value pre-treatment processes and Indigenous recovery practices; and,

The Connacht Ulster Regional Waste Management Plan 2015-2021 provided an update to the EC (Waste Directive) regulations 2011 target of 70% for the reuse, recycling, and recovery of synthetic CDW in Ireland by December 2020. Ireland has surpassed that target, with a recovery rate of 97% (National Waste Report 2012, EPA (2014).

The Connacht Ulster Regional Waste Management Plan 2015-2021 has not been updated as the three Regional Waste Management Planning Lead Authorities in Ireland (Eastern/Midlands, Southern and Connacht Ulster) are in the process of preparing a replacement combined National Waste Management Plan for a Circular Economy. This Plan should translate policy measures set out in the Government's Waste Action Plan (Department of Communications, Climate Action and Environment, 2020) for a Circular Economy published in September 2020 which focuses on circular economy, municipal waste, plastics, and packaging, construction, and demolition, green public procurement, and waste enforcement.

17.2.4 Consultation

No relevant consultations have been received for waste.

17.2.5 Assessment Criteria and Assignment of Significance

17.2.5.1 Assignment of Significance

The Institute of Environmental Management and Assessment (IEMA) published guidance in March 2020 which sets out criteria for determining the value (sensitivity) of material resources and waste (including waste infrastructure).

The determination of significance, in most cases, will be the product of professional judgement of the Waste Topic Lead and EIA Co-ordinator, with specific regard to the sensitivity or importance (value) of receptors (Table 17.1) and the magnitude of impact on these receptors (Table 17.2); and the extent to which primary, secondary and tertiary measures are expected to minimise impacts and effects.

Table 17.1: Importance or Sensitivity Matrix Definitions[1]

Importance / Sensitivity of Resource or Receptor				
Across construction and or/operation phases, the baseline/future baseline (i.e. without development) or regional inert and non-hazardous landfill void capacity is expected to…				
Negligible	**Low**	**Medium**	**High**	**Very High**
Remain unchanged or is expected to increase through a committed change in capacity.	Reduce minimally: by <1% as a result of wastes forecast.	Reduce noticeable: by 1-5% as a result of wastes forecast.	Reduce considerably: by 6-10% as a result of wastes forecast.	Reduce very considerably (by >10%); end during construction or operations; is already known to be unavailable; or would require new capacity or infrastructure to be put in place to meet forecast demand.

[1]Assessing sensitivity of waste (Section 10.2.2) Danson et al., IEMA Guide to Materials and Waste Environmental Impact Assessment, March 2020.

17.2.5.2 Assignment of Magnitude

Where the construction phase is being assessed, the magnitude of impact is considered from the point at which the site access is gained, through site remediation, enabling works, and construction, to development commissioning.

Where the operational phase is being assessed, the magnitude of impact is assessed over the course of any one full and justifiably representative year within the first three years of commissioning.

Table 17.2: Magnitude of Impact Definitions

Assessment of Magnitude				
Inert and Non-Hazardous Void Capacity				
No change	**Negligible**	**Minor**	**Moderate**	**Major**
Zero waste generation and disposal from the development	Waste generated by the development will reduce regional landfill void capacity baseline by <1%	Waste generated by development will reduce regional landfill void capacity baseline by 1-5%	Waste generated by the development will reduce regional landfill void capacity baseline by 6-10%.	Waste generated by the development will reduce landfill void capacity baseline by >10%.
Hazardous Void Capacity				
No change	**Negligible**	**Minor**	**Moderate**	**Major**
Zero waste generation and disposal from the development	Waste generated by the development will reduce national landfill void capacity baseline by <0.1%	Waste generated by development will reduce national landfill void capacity baseline by <0.1-0.5%	Waste generated by the development will reduce national landfill void capacity baseline by >0.5-1%	Waste generated by the development will reduce national landfill void capacity baseline by >1%.

17.2.5.3 Significance of Effects

The assessment of significance will be based on the matrix outlined in Table 17.3 below.

Table 17.3: Assessment of Significance Matrix[2]

		Magnitude of Impacts				
		No Change	**Negligible**	**Minor**	**Moderate**	**Major**
Sensitivity (or value) of receptor	Very high	Neutral	Slight	Moderate or large	Large or very large	Very large
	High	Neutral	Slight	Slight or moderate	Moderate or large	Large or very large
	Medium	Neutral	Neutral or slight	Slight	Moderate	Moderate or large
	Low	Neutral	Neutral or slight	Neutral or slight	Slight	Slight or moderate
	Negligible	Neutral	Neutral	Neutral or slight	Neutral or slight	Slight

[2] Danson et al., IEMA Guide to Materials and Waste Environmental Impact Assessment, March 2020.

17.2.5.4 Determining whether an effect is significant, or not

Once the effect threshold has been determined, Table 17.4 provides how the Waste Topic Leads may determine whether environmental effects are potentially significant, or not.

Where a threshold is 'slight of moderate,' i.e., transcends the significant – or not- effect boundary, professional judgement is used in combination with documented justification, to determine a final outcome. The cautious significant boundary applied responds to the need to developers and EIA practitioners to – in unison – continue to take an increasing responsibility for managing materials and wastes sustainably, with a view to incentivising sustainable resource management and (ultimately) a circular economy.

Table 17.4: Overall Significance of Effect[3]

Effect	Waste
Neutral	Not significant
Slight	
Moderate	Significant
Large	
Very Large	

17.3 Baseline Environment

17.3.1 Current Operational Overview

The current operational overview of the Proposed Scheme in Burnfoot encompasses a village including commercial and residential uses. An abandoned railway line runs between the ADS embankment and Skeoge right embankment. The surrounding area is dominated by agricultural lands.

17.3.2 Characteristics of Current Wastes

Current wastes arising at the site is a typical mix of recyclable and residual material generated from the commercial and residential properties, accompanied by mixed litter associated with urban footfall within the village of Burnfoot. The surrounding land use comprises agricultural land uses.

17.3.3 Current Method of Management / Receiving Environment

17.3.3.1 Pre-treatment and Recovery Infrastructure

Pre-treatment infrastructure covers a wide variety of facilities, but is mechanical sorting, separation and processing plants which can vary in scale and sophistication.

Recovery infrastructure covers a wide range of activities which fall within the treatment tiers of preparing for reuse, recycling, and other recovery. Pre-treatment and recovery facilities can be authorised either by the EPA,

[3] Danson et al., IEMA Guide to Materials and Waste Environmental Impact Assessment, March 2020.

under a waste licence, or by the local authorities, under a Waste Facility Permit (WFP) or Certificate of Registration (CoR).

In accordance with Construction & Demolition Waste Soil and Stone Recovery / Disposal Capacity – Update Report 2020, there were 71 authorised facilities in the Connacht Ulster Region (CUR) for soil and stone acceptance at year end 2018 as follows:

- One licenced soil recovery facility;
- Seventeen permitted facilities;
- Fifty-three registered facilities with CORs;
- No inert landfills.

Table 17.5 to Table 17.8 summarises the soil recovery facility capacities in the CUR in 2018 as per the Construction and Demolition Waste Soil and Stone Recovery / Disposal Capacity 2020 Report.

Table 17.5: Licenced Soil Recovery Facility Capacities in the CUR 2018[4]

County	No. of Facilities*	Annual Capacity (Application Stage) Tonnes	Annual Capacity (Licenced Un- commenced) Tonnes	Annual Capacity (Active and Available) Tonnes
Mayo	1	-	0	90,000

*This includes closed facilities and facilities at application stage.

Table 17.6: Inert Landfill Capacities in the CUR 2018[4]

Region	No. of Facilities	Permitted Capacity Tonnes (Lifetime)	Remaining Capacity Tonnes (Lifetime)
Connacht-Ulster	0	-	-

Table 17.7: Permitted Soil Recovery Facility Capacities in the CUR 2018[4]

Region	No. of Facilities	Permitted Capacity Tonnes (Lifetime)	Remaining Capacity Tonnes (Lifetime)
Connacht-Ulster	17	685,325	377,170

[4] Construction and Demolition Waste Soil and Stone Recovery / Disposal Capacity (2020)

Table 17.8: Registered Soil Recovery Facility Capacities in the CUR 2018[4]

Region	No. of Facilities	Permitted Capacity Tonnes (Lifetime)	Remaining Capacity Tonnes (Lifetime)
Connacht-Ulster	53	1,174,458	1,005,242

The 2020 Soil and Stone Recovery and Disposal Capacity Report suggests that there is sufficient capacity in the CUR as a whole but it is concentrated in Mayo and Galway. There are no inert landfills in the CUR but there is a large quantity of registered sites however they offer limited long-term capacity.

Figure 17.2 shows the location of licenced soil recovery facilities across Ireland.

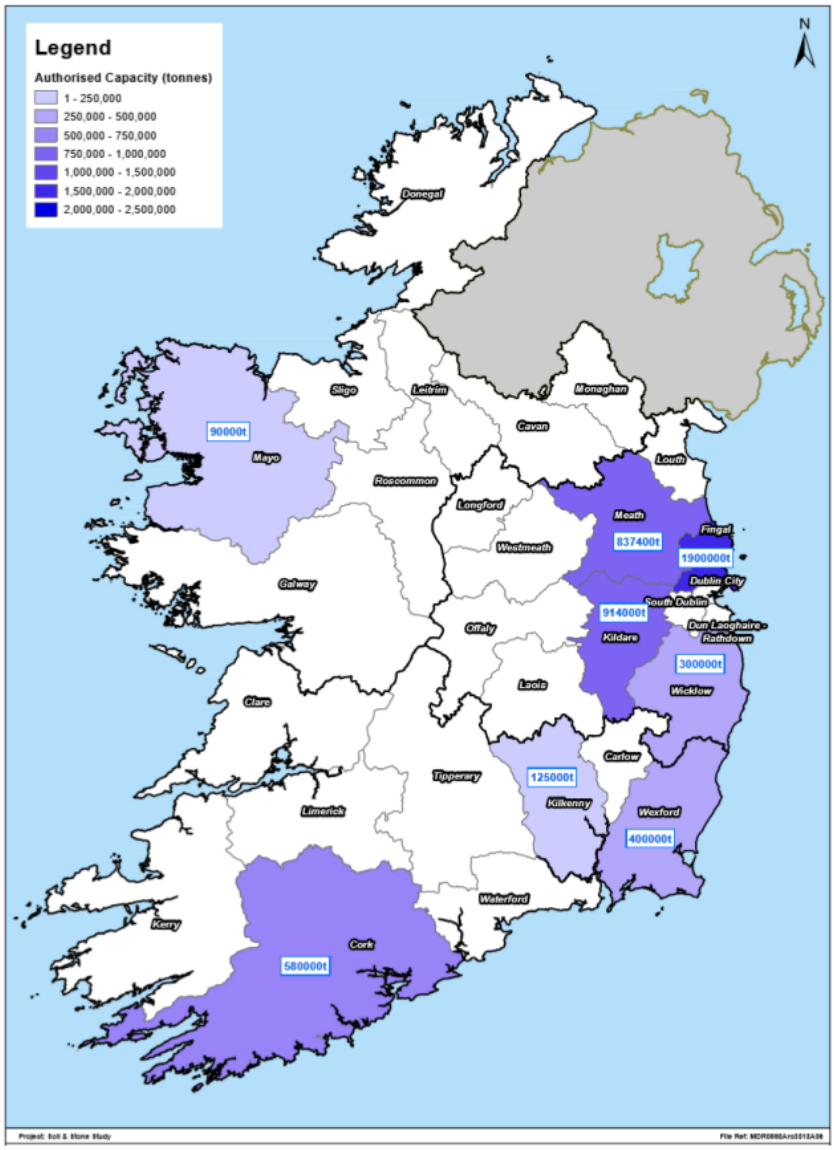

Figure 17.2: Location of Licenced Soil Recovery Capacity (included un-commenced)[5]

[5] Construction and Demolition Waste Soil and Stone Recovery / Disposal Capacity (2020)

17.3.3.2 Disposal Infrastructure

The EPA authorise non-hazardous landfill facilities, which can accept municipal waste as well as CDW, where permitted. Currently permitted non-hazardous landfill sites with available capacity are presented in Table 17.9. Two of the four operational landfills will approach their maximum lifetime consented capacity by 2027.

Table 17.9: Permitted non-hazardous landfill sites with available capacity[6]

Licensee	Landfill Site Name	EPA Licence Reg. No	Remaining Consented Disposal Capacity B(T)	Non-Hazardous Remaining Built Capacity	Expect To Have Used Up Full Consented Capacity	Operational Status
Bord na Móna plc/Drehid Waste Management Facility	Drehid	W0201-03	475,694	180,865	2027	Open
Knockharley Landfill Limited	Knockharley	W0146-02	3,797,802	978,000	2042	Open
Ballynagran Landfill Limited	Ballynagran	W0165-02	782,748	359,673	2026	Open
Ballaghveny Landfill	Ballaghveny	W0078-03	-	-	-	Open. Resumption of waste acceptance at Ballaghveny Landfill commenced on 22/09/2021

17.3.3.3 Hazardous Soil and Stone

There is no dedicated hazardous waste to energy or landfill treatment capacity in Ireland. Specialised indigenous facilities treat and stabilise hazardous soil materials which can change the classification of soil wastes from hazardous to non-hazardous where the soil can then be managed at a non-hazardous facility. There is a reliance on overseas facilities for the final treatment of hazardous soils due to a lack of national capacity in Ireland.

[6] EPA, 2023.

17.4 Description of Likely Significant Effects

17.4.1 Assessment of Construction Effects

17.4.1.1 Site Clearance and Demolition Phase Effects

Waste materials will be generated as a result of the proposed demolition of the existing R238 bridge which will be demolished in stages, removing the road surface and parapets first followed by the bridge structure. A full structural survey will be undertaken to inform a suitable method for demolition of the bridge. Existing culverts on the Carnashannagh Stream are required to be removed as well as clearance of boundary fences and a crash barrier at a residential property and salon downstream of the R238 bridge.

Waste arising from the proposed demolition phase is typically made up of several sub-waste streams, which are often mixed, depending on the amount of selective demolition and separate collection that has taken place.

Topsoil will be stripped and stored onsite for reuse as reinstatement on completion of the works. Site clearance is required for embankments and walls to facilitate the Proposed Scheme. An Invasive Species Management Plan (ISMP) has noted the presence of invasive species on the lands to be cleared. Clearance of this land without the proper measures in place has the potential to cause the spread of this invasive species of plant. Under Section 52(7) and (8) of the Wildlife Act 1976 as inserted by amendment 56(d) of the Wildlife (Amendment) Act 2000, it is an offence to cause exotic species *"to grow in a wild state in any place in the State any species of flora, or the flowers, roots, seeds or spores of flora*". It is also an offence to plant or otherwise cause to grow in the wild any plant listed in Part 1 of the European Communities (Birds and Natural Habitats) Regulations 2011 (SI No. 477/2011). The National Parks and Wildlife Service (NPWS) is the department responsible for the enforcement of both the Wildlife Act and the European Communities legislation.

Demolition waste can also contain hazardous substances such as Asbestos Containing Materials (ACMs) that are present in structures when demolished. The Safety, Health, and Welfare at Work (Exposure to Asbestos) Regulations 2006 as amended (S.I. No. 386 of 2006) and The Safety, Health, and Welfare at Work (Construction) Regulations 2013 (S.I. No. 291 of 2013) provides the legislative backdrop to all aspects of asbestos control in construction. Any actions related to ACMs must be in accordance with these regulations.

It is estimated that there is 350 m^3 of material comprising stone and soil, concrete, masonry and bricks blocks from above ground demolition works at Burnfoot Bridge, with approximately 17,750 m^3 of soil and stone material from the excavation of trenches and removal of two sections of the existing embankments on the Burnfoot and Skeoge Rivers and the embankments in the floodplain of Monreagh Park, along with cut and fill works across the site. There is the potential for excess volumes of materials to be managed off-site. Poor management of demolished or excavated waste could lead to the required disposal to landfill of waste deemed unsuitable for reuse or recycling.

17.4.1.2 Construction Phase Effects

CDW will arise from the construction phase. Typical waste materials arise from site management practices during the construction phase, for example; excess materials and packaging, over-ordering materials, off-cuts, damaged materials, and poor storage during the construction phase.

Construction waste can also include waste materials generated as a result of excavations, typically consisting of materials, for example, soil, made ground and existing foundations removed as a function of design or from excavations for new construction. Depending upon the previous use of the site, this may, or may not be contaminated. The European Waste Codes (EWC) for typical waste materials that may be generated during the construction phase are outlined in Table 17.10.

Table 17.10: Applicable List of Waste (LoW) Summary

Waste Material	LoW
Packaging	15 01
Concrete, bricks, tiles, and ceramics	17 01
Wood, glass, plastic	17 02
Bituminous mixtures, coal tar and tarred products	17 03
Metals	17 04
Soil, stone	17 05
Insulation materials and asbestos-containing materials	17 06
Gypsum-based construction materials	17 06
Separately collected fractions	20 01
Waste hydraulic oils *	13 01
Wastes of liquid fuels *	13 07

* Denotes hazardous materials

Correct segregation, storage, handling, and transport of all waste will be required to ensure there are no adverse effects on human health and that litter is not generated. The use of non-permitted waste contractors or unlicensed facilities could give rise to inappropriate management of waste and result in environmental impacts/pollution. It is essential that all waste materials are dealt with in accordance with regional policies and national legislation and that time and resources are dedicated to ensuring efficient waste management practices.

Fuels and hydraulic oils/lubricants that will be used during the construction phase are classed as hazardous. There will be fuels stored on site for machinery and construction vehicles along with oils and lubricants. Should any spillages, waste or surplus liquids be disposed of incorrectly it could cause serious harm to the surrounding environment.

There is the potential for significant quantities of materials to be deposited in landfill sites unless proper management plans are implemented.

Further breakdown of potential waste streams that may arise during the construction phases of the development and the proposed management routes are set out in Table 17.11.

Table 17.11: Potential Materials Management during the Construction Phase

Material Type	LoW	Management Option	Management Destination
Concrete	17 01 01	Crushed and reused on site	Disposal at licensed landfill
Bricks	17 01 02	Crushed and reused on site	Disposal at licensed landfill
Wood	17 02 01	Recycled or reused off site	Off site to specialist contractor
Glass	17 02 02	Recycled or reused off site	Off site to specialist contractor
Plastics	17 02 03	Recycled or reused off site	Off site to specialist contractor
Bitumen macadam	17 03 02	Recycled or reused off site	Off site to specialist contractor
Metals	17 04 07	Recycled or reused off site	Off site to specialist contractor
Stone and soil	17 05 04	Materials deemed unsuitable or not required for reuse on site and require management offsite	Off site to specialist contractor
Construction materials containing asbestos	17 06 05	Asbestos containing materials require careful removal and segregation and will be disposed of at a specialist hazardous waste landfill	Disposal at licensed specialist hazardous waste landfill
Gypsum based construction materials	17 08 02	Materials deemed unsuitable for reuse or recycling and require disposal to suitably licensed landfill	Disposal at licensed landfill
Deleterious demolition materials	17 09 04	Materials deemed unsuitable for reuse or recycling and require disposal to suitably licensed landfill	Disposal at licensed landfill
Plastic packaging	15 01 02	Recycled or reused offsite	Offsite to specialist contractor
Iron and steel	17 04 05	Recycled or reused off site	Offsite to specialist contractor

17.4.2 Assessment of Operational Effects

The operational preliminary measures will include the continued management of urban waste arisings from litter by Donegal County Council. Waste management and disposal activities would be carried out by appropriately permitted organisations. The operational phase of the Proposed Scheme is likely to have a negligible impact on waste arisings as the current use of the site for the Proposed Scheme is not anticipated to change and has therefore been scoped out of the EIA.

17.4.3 Summary of Effects

A summary of the significance of environmental impacts during the construction and operational phases is provided in Table 17.12 below.

Table 17.12: Significance of Environmental Impact

Impact	Significance of Effect
CONSTRUCTION PHASE	
Demolition of R238 bridge Likely to be inert/non-hazardous waste arisings. Quantities estimated to be demolished: • Made ground/soil & stone (199 m^3) • Masonry (98 m^3) • Concrete & inert (12 m^3) • Tarmac (43 m^3)	**Neutral or Slight** - Potential to require disposal to landfill if reuse options onsite cannot be utilised.
Excavation and removal of invasive species Under the Invasive Species Management Plan (ISMP), treatment of invasive species within the footprint of the Proposed Scheme has been underway since 2022. The current estimate for the removal of invasive species based on 2025 treatment programme is 200m^3. Methodology for the removal of invasives species is outlined in Appendix 7.2 ISMP.	**Neutral or Slight** - Potential to generate green materials and soils that require disposal to licenced deep fill landfill. Potential to spread invasive species if not correctly managed.
Excavated soils Estimated to be 17,750 m^3	**Neutral or Slight** - Potential to require disposal to landfill if reuse options onsite cannot be utilised.
Construction related waste generated from the construction works Surplus construction/excavation materials including metals, waste packaging, wrapping, waste cabling, pipework, ductwork etc	**Neutral or Slight** - Likely to require disposal to landfill if segregation and recycling initiatives not put in place on site during construction.

17.5 Interactions

There are several anticipated interactions between waste and other EIAR chapters, namely: Chapter 8 Population and Human Health, Chapter 10 Water Quality, Chapter 11 Soils, Geology and Hydrogeology, Chapter 12 Noise and Vibration and Chapter 13 Air Quality and Climate.

17.6 Mitigation and Monitoring

17.6.1 Mitigation

17.6.1.1 Construction Phase Mitigation Measures

A full structural survey will be undertaken to inform a suitable method for demolition of the existing R238 Bridge. The survey will set out all high value waste materials, such as metals, which will be removed and segregated for possible onward reuse or recycling to maximise recovery. Demolition debris will be separated into the following streams on-site:

- Masonry materials (i.e., brick, concrete blocks)
- Metals
- Timber

- Hazardous waste

The storage and reuse of demolition or excavation wastes on site may be subject to a number of waste licensing requirements. If these wastes are to be stored on site, prior to potential reuse or recovery during construction, this activity will be subject to a Waste Management Licence Exemption with a limited tonnage of material permitted to be stored on site. Storage will take place in a secure area on-site and the appointed contractor will monitor the amount of waste stored to ensure that the permitted limits of the Exemption are not exceeded. The appointed contractor (with oversight from Donegal County Council) will consult with the EPA prior to construction to ensure that the appropriate licences, permits, and exemptions are in place prior to initiation.

Contractors working on site during the works will be responsible for the collection, control and disposal of all wastes generated by the works. The appointed contractor (with oversight from Donegal County Council) will ensure that all waste materials leaving the site are transported via a licensed carrier and disposed or recovered through licenced operators in accordance with National waste legislation. This duty implies, at the very least, checking to see that the required authorisation is in place, has not expired and is appropriate for the waste types that are to be handled. Monitoring and updating of records will be implemented.

Project design will incorporate adequate dedicated space to cater for the segregation and storage of all various waste streams during construction. Separate compounds will be used for different phases of the works. Site compounds are located in or immediately adjacent to the relevant works phase, such as to cause minimal interference to the local community. Adequate security measures shall be put in place around the site and waste storage areas.

Construction waste will be managed as part of the Site Waste Management Plan (SWMP) contained in the Construction Environmental Management Plan (CEMP), which will be implemented by the appointed contractor for the duration of the construction works. As demonstrated in the outline CEMP, the CEMP will contain procedures for the management of waste and related pollution control measures. The CEMP will be a live document and will be subject to revision throughout the course of the construction phase but will contain all measures outlined in the outline CEMP appended to the EIAR. The appointed contractor will also be required to develop a detailed resource and waste management plan in advance of works commencing on site. This will be prepared in line with EPA ‘Best Practice Guidelines for the Preparation of Resource & Waste Management Plans for Construction & Demolition projects’ Published in 2021.

Specific waste management requirements include:

- Identify how the waste will be dealt with (i.e., disposal, re-use on/off site etc.).
- Building materials should be chosen with an aim to ‘design out waste.’
- Identify potential end markets e.g., reuse, recycling facilities, waste treatment facilities and disposal sites.
- All waste leaving site will be recycled, recovered, or reused where possible, with the exception of those waste streams for which appropriate facilities are currently not available.

- Segregation of waste at source where practical. On-site segregation of non-hazardous waste materials into appropriate categories, where possible, including any excavated soils, concrete, bricks, metals, and timber.
- On-site segregation of all hazardous waste materials into appropriate categories including contaminated soils, waste oil, fuels, and paints, glues, adhesives, and other known hazardous substances.
- Control measures and attention to materials quantity requirements to avoid over-ordering and generation of waste materials.
- Agreements with materials suppliers to reduce the amount of packaging or to participate in a packaging take-back Scheme.
- Implement a 'just in time' materials delivery systems to avoid materials being stockpiled, which increases the risk of the damage and disposal as waste.
- All waste materials will be stored in skips or other suitable receptacles in designated areas of the site. The waste storage area(s) will be assigned and all construction staff provided with training regarding the waste management procedures on commencement of the project.
- Measures to ensure appropriate staff training and levels of awareness in relation to waste management.
- Waste streams will be collected by an appropriately licensed and permitted private waste contractor, appointed by the contractor for recycling, recovery, or disposal at suitably licensed facilities.
- Calculate the difference between expected waste quantities prior to commencement of the project and actual waste quantities after the project is complete.

The SWMP will be implemented from the outset of the project and throughout the duration of the project taking into consideration the waste management hierarchy to encourage sustainable development, circular economy, environmental protection, and optimum use of resources. The appointed contractors for the site preparation, earthworks and construction phases of the works will be contractually obliged to follow the SWMP and all relevant legislation.

17.6.2 Monitoring

17.6.2.1 Construction Phase Monitoring

All waste types and amounts generated will be recorded and reviewed at regular intervals, to allow for continuous analysis and review of procedures that will be made to reduce waste to landfill, increase the percentage of recycling and reduce waste overall as much as possible.

Waste storage will take place in a secure area on-site and the appointed contractor will monitor the amount of waste stored to ensure that the permitted limits of any Exemption are not exceeded. The CEMP will set out measures and procedures to monitor waste flows on site and update records.

The appointed contractor will be required to appoint an Environmental Co-ordinator throughout the construction stage of the Proposed Scheme. The Environmental Co-ordinator will be trained in how to set up and maintain a record keeping system, how to perform, audit and how to establish targets for waste management on site. They will also be trained in the best method for segregation and storage of recyclable materials, have information on the materials that can be reused on-site and implement the Project CDW Management Plan.

Training of staff on site will be coordinated by the Environmental Co-ordinator and as such, a waste training programme will be organised. A basic awareness course will be held for all contractor site personnel to outline the CWMP and to detail the segregation of waste at source. This may be incorporated with other training needs (e.g., general site induction, safety training etc.). This basic course will describe the materials to be segregated, the storage methods and the location of waste storage areas. A subsection on hazardous wastes will be incorporated if required and the particular dangers of each hazardous waste will be explained.

Records will be kept for each waste material which leaves the site, whether for reuse on another site, recovery, recycling, or disposal.

A system will be put in place to record the waste arising on site during demolition and construction phases. The Environmental Co-ordinator will have responsibility to record the following:

- Waste taken off-site for reuse;
- Waste taken off-site for recovery;
- Waste taken off-site for recycling;
- Waste taken off-site for disposal.

For each movement of waste off-site a signed waste collection docket will be obtained by the Environmental Co-ordinator from the licensed waste contractor. This will be carried out for each material type. This system will also be linked with the delivery records. A signed waste acceptance docket will be issued for each movement of waste on-site.

If waste movements are not accounted for, the reasons for this should be established in order to see if and why the record keeping system has not been maintained. Each material type will be examined in order to see where the largest percentage waste generation is occurring. The waste management methods for each material type will be reviewed in order to highlight how waste can be minimized.

The appointed Environmental Co-ordinator will be responsible for conducting a waste audit at the site during the C&D phase of the development. A review of all records for waste generated and transported off-site, should be undertaken mid-way through the C&D phase.

Upon completion of the C&D phase a final report will be prepared summarising the outcomes of waste management processes adopted and the total recycling / reuse / recovery figures for the Proposed Scheme.

17.7 Cumulative Effects

Chapter 19 ‘Interactions & Cumulative Effects’ identifies all those projects which have been considered and assessed with regards to cumulative impacts. As part of this review, several other planning applications were

considered, however deemed unlikely to have significant cumulative impacts. There will therefore be no cumulative impacts on waste as a result of neighbouring developments.

17.8 Residual Effects

17.8.1 Construction Phase Residual Effects

A carefully planned approach to the demolition of R238 bridge and waste management and adherence to a SWMP during the construction phase will ensure that the waste effects on the environment and on landfill void space capacity will not be significant. There are proposals to reuse the majority of excavated material in the Proposed Scheme which would facilitate less waste requiring off-site management and these materials would be a substitute for virgin aggregates which is a more sustainable use of resources. Other waste not suitable for reuse would go for recycling with minimal amounts of waste will need to be disposed of in landfill. Therefore, the residual impact of the construction phase in relation to waste management is predicted to be neutral or slight with residual effect outcome being not significant.

17.9 Summary of Effects

The summary of effects is outlined in Table 17.13.

Table 17.13: Summary of Effects

Receptor	Sensitivity of Receptor	Assessment of Magnitude	Predicted Effect	Adverse/ Beneficial	Permanent/ Temporary	Mitigation Measures	Significant / Not Significant
Construction Phase							
Non – Hazardous and Inert Landfill Void Space Capacity	Medium	Negligible	Neutral or Slight	Adverse	Temporary	See section 17.6.1.1	Not significant

17.10 Limitations of Assessment

There are no known limitations to the assessment presented in the EIAR.