15 MATERIAL ASSETS (WASTE)

15.1 Introduction

This chapter of the EIAR was prepared to assess the potential significant effects of the Proposed Development on waste management.

15.1.1 Quality Assurance

This chapter was prepared by Laura Griffin, Environmental Consultant, Enviroguide. Laura has a Master of Science (Hons) degree in Climate Change from Maynooth University and a Bachelor of Arts (Hons) degree in English and Geography from Maynooth University. Laura has 5+ years of professional experience and has worked as an Environmental Consultant with Enviroguide since 2021 and has experience preparing Environmental Impact Assessment (EIA) Screening Reports, Air Quality and Climate, Noise and Vibration and Material Assets (Waste and Utilities) Chapters of Environmental Impact Assessment Reports (EIAR)s.

The report has been reviewed by Gráinne Ryan, Principal Consultant with Enviroguide. Gráinne has worked in consulting for over 11 years and most recently directly within the renewable energy industry. Gráinne's project experience in the waste, pharmaceutical, residential, industrial and commercial sectors cover the planning, consenting and operational stages.

15.2 Assessment Methodology

15.2.1 Relevant Legislation and Guidance

The methodology adopted for the assessment takes cognisance of the relevant guidelines, in particular the following:

- Environmental Protection Agency (2022) Guidelines on the information to be contained in Environmental Impact Assessment Reports (EIAR);
- EPA (2021) Best Practice Guidelines for the Preparation of Resource and Waste Management Plans for Construction and Demolition Projects;
- Waste Framework Directive (Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 on waste) as amended by Directive (EU) 2018/851;
- European Union (Waste Directive) Regulations 2020, S.I. No. 323 of 2020
- Waste Management Acts 1996 (as amended);
- The National Waste Management Plan for a Circular Economy 2024-2030; and
- Fingal Development Plan 2023-2029.

The scope of the work undertaken for the impact assessment included desk-based study of waste management services within the defined study area. The desk study involved collecting all the relevant data for the Proposed Development site and surrounding area including published information and details pertaining to the Proposed Development provided by the Applicant and design team. Information on waste management in the vicinity of the site of the Proposed Development will be assembled by reviewing the following information:

- Resource and Waste Management Plan (construction phase) (Enviroguide, 2025);
- Construction Environmental Management Plan (construction phase) (Enviroguide, 2025);
- Operational Waste Management Plan (operational phase) (Enviroguide, 2025);
- http://mywaste.ie;

- EPA's Waste Application, Licence or Environmental Information Search Engine https://epawebapp.epa.ie/terminalfour/waste/index.jsp; and
- National Waste Collection Permit Office (NWCPO) – Waste Collector and Waste Facility Permit Search Engine http://www.nwcpo.ie/permitsearch.aspx.

15.2.2 Description and Assessment of Potential Impacts

Impacts will vary in quality from negative, to neutral or positive. The effects of impacts will vary in significance on the receiving environment. Effects will also vary in duration. The terminology and methodology which will be used for assessing the 'impact' significance and the corresponding 'effect' throughout the chapter is described in Table 15 -1.

Table 15-1: Terminology used to assess the quality of potential impacts and effects (Source EPA Guidance, 2022)

Quality of Effects/Impacts	**Definition**
Negative	A change which reduces the quality of the environment.
Neutral	No effects or effects that are imperceptible, within the normal bounds of variation or within the margin of forecasting error.
Positive	A change that improves the quality of the environment.
Significance of Effects/Impacts	**Definition**
Imperceptible	An effect capable of measurement but without significant consequences.
Not significant	An effect which causes noticeable changes in the character of the environment but without significant consequences.
Slight	An effect which causes noticeable changes in the character of the environment without affecting its sensitivities.
Moderate	An effect that alters the character of the environment in a manner that is consistent with existing and emerging baseline trends.
Significant	An effect which, by its character, magnitude, duration or intensity alters a sensitive aspect of the environment.
Very Significant	An effect which, by its character, magnitude, duration or intensity significantly alters a sensitive aspect of the environment.
Profound	An effect which obliterates sensitive characteristics.
Duration of Effects/Impacts	**Definition**
Momentary	Effects lasting from seconds to minutes.

Quality of Effects/Impacts	Definition
Brief	Effects lasting less than a day.
Temporary	Effects lasting one year or less.
Short-term	Effects lasting one to seven years.

15.2.3 National Waste Management Action Plans

The National Waste Management Plan for a Circular Economy (NWMPCE) 2024 -2030, sets out the framework for the prevention and management of waste across Ireland. This document is a statutory document underpinned by national and EU waste legislation, and reflects the targets set out for C & D waste in the Waste Framework Directive (WFD).

The strategic vision of the Plan is to rethink the approach to managing waste, and to move towards a 'circular economy' approach where resources are reused or recycled as much as possible, and the overall generation of waste is minimised.

In order to achieve this vision, the Plan has set out a number of specific and measurable performance targets in relation to construction and demolition waste:

- Achieve a 2% reduction per annum is proposed for total construction and demolition waste to achieve a cumulative 12% reduction by 2030 (baseline is 9 million tonnes); and
- Achieve 70% C & D waste sent for reuse, recycling and other recovery of construction and demolition waste (excluding natural soils and stones and hazardous wastes).

The Plan aims to "prioritise waste prevention and circularity in the construction and demolition sector to reduce the resources that need to be captured as waste". In order to achieve the objectives, set out in NWMPCE, it is imperative that robust resource and waste management plans are developed for and designed into the pre-construction, construction and operational phases of the Proposed Development.

15.2.4 Article 27 of the European Communities (Waste Directive) Regulations 2011

Under Article 27 of the European Communities (Waste Directive) Regulations 2011 (SI No. 126 of 2011) as amended (referred to hereafter as Article 27), uncontaminated soil and stone free from anthropogenic contamination which is excavated during the construction phase of a development can be considered a by-product and not a waste, if (a) further beneficial use of the material is certain, (b) it can be used directly without any further processing, (c) it is produced as an integral part of the development works and (d) the use is lawful and will not have any adverse environmental or human health impacts (EPA, 2019).

For Article 27 to apply, the beneficial use mentioned in point (a) above must be identified for the entirety of the excavated soil from the Proposed Development prior to its production, with that use taking place within a definite timeframe, for it to be regarded as certain.

15.3 Receiving Environment

The following can be read in conjunction with Chapter 7 of this EIAR – Land, Soils, and Geology including relevant mapping.

15.3.1 Proposed Development – Plot 1 (Luttrellstown Gate Phase 2)

15.3.1.1 Site Location and Description

The site of the Proposed Development is located to the south of Clonsilla Town, adjacent to the west of Carpenterstown and to the southwest of Blanchardstown. It is accessible through the R121 (regional road).

The site of the Proposed Development comprises a field of undeveloped grasslands with no evidence of previous structures or development.

15.3.1.2 Soils

The soils beneath the majority of the site are mapped by Teagasc (Teagasc, 2025) as mineral poorly drained (mainly basic), which are classified as Surface water Gleys, Ground water Gleys (IFS Soil Code: BminPD) derived from mainly calcareous parent materials described as till derived chiefly from limestone (TLs).

The most northern part of the site is mapped as shallow well drained mineral (mainly basic), which are classified as Renzinas and Lithosols (IFS Soil Code: BminSW) derived from mainly calcareous parent materials described as Bedrock at surface-Calcareous (RckCa).

15.3.1.3 Quaternary Deposits

The subsoil or quaternary deposits beneath the site are mapped by the GSI (GSI, 2025) as till derived from limestones (TLs).

15.3.1.4 Quaternary Geomorphology

Two (2 No.) deglacial hummocky sand and gravel have been identified approximately 1.61km north and 1.71km northeast of the site, respectively (GSI, 2025). A striae has been identified approximately 0.93km east of the site. There is a subglacial landform (Crag-and-Tail) approximately 0.77km south of the site. There are also undifferentiated meltwater channels approximately 0.63km and 1.14km southwest of the site. The meltwater channels are orientated in a northeast-to-southwest direction and northwest-to-south direction, respectively (GSI, 2025).

15.3.1.5 Bedrock Geology

The bedrock beneath the northern half of the site is mapped by the GSI (GSI, 2025) as the Lucan Formation (code: CDLUCN) described as dark limestone & shale (`calp). The bedrock beneath the southern half of the site is classified as the Tober Colleen Formation (code: CDTOBE) which is described as calcareous shale, limestone conglomerate.

While there is no bedrock outcrops mapped within the site boundary, there are a number of bedrock outcrops mapped by the GSI (GSI, 2024) within a 2km radius of the site. The closest are located immediately north of the site along the railway tracks adjacent to the northern boundary of the site.

15.3.1.6 Invasive Species

The requirement for an invasive species survey will be assessed in advance of construction works commencing onsite. If invasive species are identified at the Proposed Development Site, an Invasive Alien Species (IAS) Management Plan will be developed which will identity mitigation measures to prevent uncontrolled transportation and dispersion of invasive species from the Proposed Development Site. All works will be undertaken in accordance the mitigation measures outlined in the IAS Management Plan.

15.3.2 Proposed Development - Plot 2 (St Mochta's LRD).

15.3.2.1 Site Location and Description

The site of the Proposed Development is located to the south of Clonsilla Town, adjacent to the west of Carpenterstown and to the southwest of Blanchardstown. It is accessible through the R121 (regional road).

The majority of the site of the Proposed Development comprises a football pitch (St. Mochtas FC) and associated infrastructure including two (2No.) astroturf pitches, hardstanding area for parking and a small clubhouse and shed. While the southern portion of the site comprises undeveloped grasslands.

15.3.2.2 Soils

The soils beneath the majority of the site are mapped by Teagasc (Teagasc, 2025) as mineral poorly drained (mainly basic), which are classified as Surface water Gleys, Ground water Gleys (IFS Soil Code: BminPD) derived from mainly calcareous parent materials described as till derived chiefly from limestone (TLs).

The soils beneath a small area in the northern and southern portions of the site are mapped as deep well drained mineral (mainly basic), which are classified as Grey Brown Podzolics, Brown Earths (medium-high base status) (IFS Soil Code: BminDW) derived from mainly calcareous parent materials described as till derived chiefly from limestone (TLs).

The most northern portion of the site and a small area to the west of the site are mapped as shallow well drained mineral (mainly basic), which are classified as Renzinas and Lithosols (IFS Soil Code: BminSW) derived from mainly calcareous parent materials described as Bedrock at surface-Calcareous (RckCa).

15.3.2.3 Quaternary Deposits

The subsoil or quaternary deposits beneath the site are mapped by the GSI (GSI, 2025) as till derived from limestones (TLs).

15.3.2.4 Bedrock Geology

The bedrock beneath the majority of the site is mapped by the GSI (GSI, 2025) as the Lucan Formation (code: CDLUCN) described as dark limestone & shale (`calp). The bedrock beneath the most southwestern corner of the site is classified as the Tober Colleen Formation (code: CDTOBE) which is described as calcareous shale, limestone conglomerate.

While there is no bedrock outcrops mapped within the site boundary, there are a number of bedrock outcrops mapped by the GSI (GSI, 2024) within a 2km radius of the site. The closest are located immediately north of the site along the railway tracks adjacent to the northern boundary of the site.

Refer to Chapter 7 of this EIAR – Land, Soils and Geology for further information and mapping.

15.4 Characteristics of the Proposed Development

A comprehensive description of the Proposed Development is presented in Chapter 3 of this EIAR.

15.4.1 Aspects Relevant to this Chapter

The waste management objectives for the Proposed Development are as follows, and will facilitate material reuse and recycling, where possible, and seek to divert waste from landfill:

- Prevention: The Principal Contractor will prevent and minimise waste generation where possible by ensuring large surpluses of construction materials are not delivered to the site

through coordination with the suppliers, operating a 'just-in-time' delivery scheme and ensuring sub-contractors conform to the Contractor(s) Construction and Environmental Management Plan (CEMP), being an update to the principles set out in the CEMP (Enviroguide, 2025) submitted with this application;

- Reuse: Reusing wastes and surplus materials where feasible and in as many high value uses as possible;
- Recycle: Recycling wastes where possible such as introducing on site crushers to produce waste derived aggregates which, subject to appropriate testing and approvals, may be re-used in the Proposed Development; and
- Disposal: Where disposal of waste is unavoidable, this will be undertaken in accordance with the Waste Management Act 1996, as amended.

15.4.2 Construction Phase

All construction works will occur following a phased process. However, the entire construction phase will involve site preparation works, the establishment of construction services and the construction of the proposed residential units. Site preparation works will involve site clearance, establishing entranceways and haul roads for vehicles, surveying and setting out, setting up the construction site fencing and compounds.

15.4.3 Operational Phase

An Operational Waste Management Plan (OWMP) has been prepared by Enviroguide (2025) and has been submitted with this planning application. Adherence to the OWMP will facilitate a high level of recycling, reuse, and recover at the Proposed Development (Plot 1 and Plot 2) during the operational phase.

15.5 Potential Impact of the Proposed Development

15.5.1 Construction Phase

A Resource Waste Management Plan (RWMP) and Construction Environmental Management Plan (CEMP) have been prepared by Enviroguide (2025) for the construction phase of the Proposed Development (Plot 1 and Plot 2) and will be submitted with the planning application.

The Proposed Development includes the demolition and removal of a vacant house and agricultural buildings at St Mochtas LRD (Plot 1).

The existing building area footprint to be demolished is approximately 256.7 m^2. The RWMP (Enviroguide, 2025) has estimated that the construction and demolition (C&D) waste to be generated per m^2 of building will be as follows:

- 168 kg/m^2 demolished

A programme of ground clearance and levelling will be undertaken across the site as required. This will include the removal of all scrap materials, containers and debris, minor vegetation / shrubs and tree clearance, and excavation. In addition, some diversion of services will be undertaken where required.

During this clearance phase of the Proposed Development, it is anticipated that there will some surplus of building materials, such as timber off-cuts, broken concrete blocks, cladding, plastics, metals, and tiles generated. There may also be excess concrete during construction which will need to be disposed of. Plastic and cardboard waste from packaging and supply of materials will also be generated.

The main non-hazardous and hazardous waste streams that could be generated by construction activities at a typical site are shown in Table 15-2. The List of Waste (LoW) code (as effected from 1 June 2015) for each waste stream is also shown.

Table 15-2: Typical Waste Types Generated and LoW Code

Waste Material	LoW Code
Concrete	17 01 01
Bricks	17 01 02
Tiles and Ceramics	17 01 03
Mixture of concrete, bricks, tiles, and ceramics	17 01 07
Wood, Glass and Plastic	17 02 01, 17 02 02 and 17 02 03
Metals (including their alloys)	17 04 01, 17 04 02, 17 04 03, 17 04 04, 17 04 05, 17 04 06 and 17 04 07
Non-Hazardous Soil and Stone	17 05 04
Hazardous Soil and Stone	17 05 03*
Gypsum-based Construction Material	17 08 02
Bituminous Mixtures	17 03 02
Paper and Mixed C&D Wastes	20 01 01
Non-Hazardous Mixed C&D Wastes	17 09 04
Electrical and electronic components	20 01 35* and 20 01 36
Batteries and accumulators	20 01 33* and 20 01 34
Liquid fuels	13 07 01*, 13 07 02* & 13 07 03*
Chemicals (solvents, pesticides, paints, adhesives, detergents etc.)	20 01 13*, 20 01 19*, 20 01 27*, 20-01 28, 20 01 29* & 20 01 30
Insulation materials	17 06 04

Table 15-3 shows the breakdown of C&D waste types produced on a typical site based on data from the EPA National Waste Statistics (EPA, September 2024, National Waste Statistics Summary Report for 2022). The waste categories in Table 15-3 will be segregated into general waste and dry recycling categories.

Table 15-3: Typical Waste Types Generated and LoW Code

Waste Types	%
Soil, Stones and Dredging Spoil	82
Segregated Concrete, Brick, Tile, and Gypsum	7
Mixed C&D Waste	7
Metals	3
Segregated Wood, Glass, and Plastic	>1
Bituminous Mixtures	1
Total	100

There will also be a surplus of soil and bedrock arising from groundworks which will require offsite removal for reuse or recovery in accordance with appropriate statutory consents and approvals. It is estimated that 5000m^3 of soil will be excavated during the pre-construction works. Where possible, surplus soil that is verified to be clean inert soil will be removed from the Site under an Article 27 By-product notification.

The RWMP will be updated with predicted and actual C&D waste / surplus soil and bedrock quantities determined as part of the design for planning and as information becomes available in advance of construction works commencing on-site.

Until final materials and detailed construction methodologies have been confirmed, it is difficult to predict with a high level of accuracy the construction waste that will be generated from the proposed works as the exact materials and quantities may be subject to some degree of change and variation during the construction process. The RWMP is to be updated with actual quantities as information becomes available during the works. These waste quantities will be recorded along with the List of Waste (LoW) code for each waste stream. The waste management objective will be to prevent waste arising in the first place, and to re-use, recycle or recover waste materials where possible.

A policy of 'as needed' ordering and strict purchasing procedures will also prevent waste arisings as far as possible.

Opportunities for the prevention and reduction of waste will be considered throughout all stages of the Proposed Development (Plot 1 and Plot 2) construction phase. The Contractor will plan the construction process to eliminate/reduce waste; specifically, careful planning will minimise the volume arising on-site, facilitate the use of reclaimed materials in the works, and influence wastage caused by poor materials handling.

Table 15-4 shows the targets for recovery during the construction phase of the Proposed Development based on data from the EPA National Waste Statistics (EPA, September 2024, National Waste Statistics Summary Report for 2022).

Table 15-4: Predicted Recovery Targets

Waste Type	Recycling	Energy Recovery	Backfilling*	Disposal
	%	%	%	%
Mixed C&D Waste	22%	25%	19%	33%
Segregated wood, glass, and plastic	57%	28%	1%	15%
Bituminous Mixtures	54%	0%	46%	0%
Metals	100%	0%	0%	0%
Concrete, brick, tile, and gypsum	56%	1%	41%	2%
Soil and Stone	0%	0%	93%	7%
Waste treatment residues	14%	29%	24%	32%
Total	**9.9%**	**1.8%**	**80.8%**	**7.5%**

Note:

'*' = Backfilling refers to a recovery operation, carried out at authorised facilities, 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. It includes worked out quarries that are in the process of being restored or sites where soil and stone is imported to the site to raise natural ground levels (EPA, 2024)

Onsite storage of any hazardous wastes produced will be kept to a minimum, with removal offsite organised on a regular basis. Storage of all hazardous wastes on-site will be undertaken so as to minimise exposure to onsite personnel and the public and to also minimise potential for environmental impacts. Hazardous wastes will be recovered, wherever possible, and failing this, disposed of appropriately. Hazardous wastes produced (i.e., waste fuels/chemicals) will be kept to a minimum, with removal off-site organised on a regular basis by an appointed specialist hazardous waste contactor.

In the unlikely event that hazardous wastes, previously deposited wastes or previously unidentified contaminated soil are discovered on-site, the Main Contractor will immediately notify the Client and other relevant authorities as required, and a hazardous waste/soil management plan will be designed and implemented detailing the estimated volumes, mitigation measures, destinations for the authorised disposal/treatment and the designated authorised contractors for the movement of the material. This is precautionary as there is no indication of hazardous materials on site.

Onsite storage of any hazardous wastes produced will be kept to a minimum, with removal offsite organised on a regular basis. Storage of all hazardous wastes on-site will be undertaken so as to minimise exposure to onsite personnel and the public and to also minimise potential for environmental impacts. Hazardous wastes will be recovered, wherever possible, and failing this, disposed of appropriately. Hazardous wastes produced (i.e., waste fuels/chemicals) will be kept to a

minimum, with removal off-site organised on a regular basis by an appointed specialist hazardous waste contactor.

In the unlikely event that hazardous wastes, previously deposited wastes or previously unidentified contaminated soil are discovered on-site, the Main Contractor will immediately notify the Client and other relevant authorities as required, and a hazardous waste/soil management plan will be designed and implemented detailing the estimated volumes, mitigation measures, destinations for the authorised disposal/treatment and the designated authorised contractors for the movement of the material. This is precautionary as there is no indication of hazardous materials on site.

Material will be segregated on-site for the appropriate waste stream and off-site recovery/disposal destination. The Construction Waste Manager or appointed delegate will ensure waste streams are adequately identified. The segregation and management of waste storage and stockpiling will be routinely inspected and audited by the Construction Waste Manager and audit findings recorded in the RWMP records.

There will be no crushing of concrete on-site using a mobile crushing plant. Concrete will be segregated for removal off-site to an authorised permitted/licensed waste facility for recovery, recycling.

C&D waste will be segregated on-site into labelled dedicated skips / receptacles. Where the on-site segregation of certain waste types is not practical, off-site segregation will be carried out an authorised waste recovery facility.

Dedicated bunded storage containers will be provided for hazardous wastes which may arise such as batteries, paints, oils, chemicals etc., if required.

Waste materials generated from site office and canteen will be segregated into general waste, biodegradable waste and dry recycling and stored in appropriate refuse bins in a dedicated storage area on-site, where it is practical.

In the event of material being temporarily stockpiled on-site for reuse in the Proposed Development or in the event of material excavated pending waste classification for removal off-site, the material will be temporarily stockpiled in a designated area on-site. Stockpiles of different waste material will be located, maintained, and separated by a sufficient distance to prevent any inadvertent mixing of excavated material. All stockpiles will be clearly identified (e.g., signage) and recorded on a site map. Additional details on the management of stockpiles and procedures to prevent environmental and nuisance issues will be documented in the Construction and Environmental Management Plan (CEMP) which will be updated accordingly by the Appointed Contractor in advance of construction works commencing on-site.

Any heavily contaminated material/soil that may be encountered will need to be segregated in accordance with the measures outlined in the CEMP (Enviroguide, 2025) for appropriate sampling, waste classification and authorised removal off-site.

The Construction Environmental Site Manager will ensure that site personnel involved in the excavation and removal of waste soil materials at the site are informed of and can identify the different waste types and categories of waste soil materials encountered on-site.

The Construction Waste Manager will ensure that site personnel involved in the excavation and removal of waste soil materials at the site are informed of and can identify the different waste types and categories of waste soil materials encountered onsite.

Waste will also be generated from construction workers e.g., organic/food waste, dry mixed recyclables (wastepaper, newspaper, plastic bottles, packaging, aluminium cans, tins, and cartons), mixed non-recyclables and potentially sewage sludge from temporary welfare facilities provided on site during the construction phase. Waste printer/toner cartridges, waste electrical and electronic equipment (WEEE) and waste batteries may also be generated infrequently from site offices. Office and canteen waste, including food waste, will be stored in wheelie bins on site and it will be collected by an appropriately authorised waste collector. All wastes generated on site will be sent for recycling, recovery, or disposal to a suitably licensed or permitted waste facility.

The potential impact from the construction phase on waste recovery and disposal is likely to be short-term, negative, direct and slight in nature.

15.5.2 Operational Phase

An Operational Waste Management Plan (OWMP) has been prepared for the Proposed Development (Plot 1 and Plot 2) and will be submitted with the planning application. The OWMP has been prepared to ensure that the management of waste during the operational phase of the Proposed Development is undertaken in accordance with current legal and industry standards including the 'Waste Management Act 1996, as amended', and associated Regulations including, 'Protection of the Environment Act 2003 as amended', 'Litter Pollution Act 1997 as amended', the 'National Waste Management Plan for a Circular Economy 2024-2030' and 'Fingal County Council Segregation, Storage and Presentation of Household and Commercial Waste Bye-Laws 2020' (hereinafter referred to as 'the bye-laws').

The operational phase of the Proposed Development will result in an increase in the production of municipal waste in the region and will increase demand on waste collectors and treatment facilities, however, as the surrounding area is urban in nature, waste collection is commonplace. Under the classification system, different types of wastes are fully defined by a code. The List of Waste (LoW) code (previously referred to as European Waste Code or EWC) for typical waste materials expected to be generated during the operation of the Proposed Development are provided in Table 15-5.

Table 15-5: Expected Waste Types and List of Waste Codes

Waste Description	List of Waste Code
Mixed Muncipal Wsate	20 03 01
Dry Mixed Recyclables	20 03 01
Biodegradable Kitchen Waste	20 01 08
Glass	20 01 02
Bulky Wastes	20 03 07
Waste Electrical and Electronic Equipment*	20 01 35* 21 01 36
Batteries and Accumulators*	20 01 33* 20 01 34
Textiles	20 01 11
Fluorescent tubes and other mercury containing waste*	20 01 21
Chemicals (solvents, pesticides, paints & adhesives, detergents, etc.)*	20 01 13, *, 20 01 19*, 20 01 27*, 20 01 28, 20 01 29*, 20 01 30
Plastic	20 01 39
Metals	20 01 40

Waste Description	List of Waste Code
Paper and Cardboard	20 01 01

**Individual waste type may contain hazardous materials*

The predicted waste types that will be generated at the Proposed Development (Plot 1 and Plot 2) residential units include the following:

- Mixed Municipal Waste (MMW)/General Waste;
- Dry Mixed Recyclables (DMR) – including cardboard, plastic packaging, aluminium cans, tins, paper, and Tetra Pak cartons;
- Organic (food) Waste; and
- Glass.

In addition to the typical waste materials that will be generated daily, there will be some additional waste types generated in small quantities that will need to be managed separately including:

- Bulky wastes – including furniture, carpets, mattresses;
- Waste electrical and electronic equipment (WEEE);
- Batteries;
- Textiles – clothes or soft furnishings;
- Light bulbs or fluorescent tubes;
- Chemicals – old medicines, paints, detergents; and
- Waste oil - cooking oil.

All waste collections must take place in compliance with conditions of the Waste Contractor's Waste Collection Permit for the region and in line with the Local Authority bye-laws and the Waste Management (Waste Collection Permit) Regulations 2007 as amended. All residents are obliged by law to avail of the waste management service and must comply with local bye-laws and Statutory Instruments in relation to the presentation of waste for collection. Waste collections for a four-bin system service will be available from the time of first occupancy (i.e. even if all dwellings are not occupied).

A waste collection service will be available to all occupants from first occupancy, irrespective of whether all units have been filled or not.

In all cases, waste collection vehicles will service the bins, and the empty bins will be returned to the Waste Storage Areas. Bins will never be left outside the curtilage of the development. Access and egress of the waste collection vehicles will be in accordance with the Traffic Management Plan for the facility which has ensured the design allows for free-flowing movement of refuse collection vehicles throughout the development. BS 5906: 2005 – Waste Management in Buildings – Code of Practice has been taken into consideration when detailing vehicular access and egress to the development for the purposes of waste collection.

Records of the collections from the apartments and duplexes will be maintained by the management company for the development including reports from the facilities to which the waste is taken. Residents of individual dwellings will be responsible for maintaining their own waste collection records.

All bins in the shared Waste Storage Areas will be accessible for collection by the waste management contractor. It will be the responsibility of the management company to ensure that bins are accessible

for collection from the Waste Storage Areas by the waste management operatives and to assist on collection day to wheel out and replace bins during collection where required.

Occupants of residential houses will be responsible for placing their own bins at the kerb for collection, and for the return of those bins to the storage areas within the curtilage of their dwelling in compliance with the FCC Bye Laws require that bins must not be presented before 6pm the previous night nor left out post collection beyond 9am the day following the day of collection.

The waste strategy presented in the OWMP sets out how waste storage and management has been designed in accordance with legal requirements, policies and good management guidelines.

By implementing design and actions outlined in this OWMP, a high level of recycling, reuse and recovery will be achieved at the development in line with European targets. Dry Mixed Recyclables (DMR) and Organic (food) Waste will be segregated at source to reduce the quantity of residual waste materials requiring off-site recovery or disposal.

The source segregation of waste types as detailed in this report will help to achieve the targets set out in the *National Waste Management Plan for a Circular Economy 2024-2030*.

The design of the Waste Storage Areas will meet the requirements as detailed in the "*Sustainable Urban Housing: Design Standards for New Apartments",* July 2023.

The capacity of waste collection companies and waste management facilities in Fingal have been designed with forward planning and expansion in mind to cater for a growing population. It is necessary that all the developments provide the infrastructure and services to assist residents to segregate domestic waste at source, in order to reduce the generation and disposal of non-recyclable mixed waste. Existing waste collections currently take place in the local area and during the operational phase, the Proposed Development (Plot 1 and Plot 2) will be added to an existing collection route. The potential impact from the operational phase on municipal waste disposal is likely to be long-term, negative, direct and slight in nature.

15.5.3 Cumulative

Cumulative Impacts can be defined as "impacts that result from incremental changes caused by other past, present or reasonably foreseeable actions together with the project". Effects which are caused by the interaction of effects, or by associated or off-site projects, are classed as indirect effects. Cumulative effects are often indirect, arising from the accumulation of different effects that are individually minor.

A review of other off-site developments was completed as part of this assessment. Chapter 3 of this EIAR details the existing, proposed and granted planning permissions on record in the area, a review of these planning permissions has been completed as part of this assessment.

With regard to the other developments under construction and proposed permitted in the vicinity of the site of the Proposed Development, there will be a greater demand on existing local waste management services and on regional waste acceptance facilities.

The capacity of waste collection companies and waste management facilities in Fingal have been designed with forward planning and expansion in mind to cater for a growing population. It is necessary that all the developments provide the infrastructure and services to assist residents to segregate domestic waste at source, in order to reduce the generation and disposal of non-recyclable mixed waste. Existing waste collections currently take place in the local area and during the operational phase, the Proposed Development (Plot 1 and Plot 2) will be added to an existing collection route. The likely effect will be neutral and not significant on waste management facilities in the area in the long term.

15.5.3.1 Do-Nothing Impact

In the 'Do Nothing' scenario, the Proposed Development does not proceed and there would be no excavation, construction or operational waste generated at the site. There would, therefore, be no additional demand or loading on waste management infrastructure locally or nationally and thus there would be a neutral effect on the environment in terms of waste.

15.6 Mitigation Measures (Ameliorative, Remedial or Reductive Measures)

The mitigation measures discussed are applicable to Plot 1 and Plot 2.

15.6.1 Incorporated Design Mitigation

The following measures have been incorporated into the design:

- Buildings have been designed with material efficiency in mind. This involves reducing the amount of materials used in the building fabric and minimising the waste during construction;
- Opportunities to achieve on-site and off-site reuse and recycling of waste have been identified; and
- Dedicated, secure waste segregation areas have been selected for the duration of the enabling works. The dedicated waste storage areas within the waste segregation points will house all bins and skips for the storage of segregated construction waste generated. All containers will be marked with clear signage which will identify which waste types are to be placed into each container.

15.6.2 Construction Phase Mitigation

The waste management objective will be to prevent waste arising in the first place, and to re-use, recycle or recover waste materials where possible. The following mitigation measures are recommended for the construction phase of the Proposed Development regarding waste management:

- Waste materials will be separated at source and will follow the Resource and Waste Management Plan (RWMP) and Contractor(s) Construction Environmental Management Plan (CEMP);
- Prior to the commencement of the construction phase detailed calculations of the quantities of topsoil, subsoil and green waste will be prepared, and soils will be tested to confirm they are clean, inert or non-hazardous;
- A policy of 'as needed' ordering and strict purchasing procedures will be implemented to prevent waste arisings as far as possible;
- The Contractor will vet the source of aggregate, fill material and topsoil imported to the site in order to ensure that it is of a reputable origin and that it is "clean" (i.e., it will not contaminate the environment).
- The Contractor and/or Council will implement procurement procedures to ensure that aggregate, fill material and topsoil are acquired from reputable sources with suitable environmental management systems as well as regulatory and legal compliance;
- The waste materials generated during the construction phase will be stored in suitably size receptables and transferred offsite for appropriate processing, recycling and recovery;
- Waste materials generated from the construction phase that are unsuitable for reuse or recovery will be separately collected;

- Disposal of construction generated wastes will be considered a last resort and only after recycling or recovery options have been ruled out;
- A suitably competent and fully permitted waste management company will be employed to manage waste arising for the construction phase. The appointed waste contractor must have the relevant authorisations for the collection and transport of waste materials, issued by the National Waste Collection Permit Office (NWCPO);
- All waste materials will be transported to an appropriately authorised facility, which must have the relevant authorisations for the acceptance and treatment of the specific waste streams, i.e., a Certificate of Registration (COR) or a Waste Facility Permit (WFP) as granted by a Local Authority, or a Waste/Industrial Emission Licence as granted by the Environmental Protection Agency;
- It is not envisaged that there will be any hazardous waste generated throughout the construction works however, in the event that hazardous soil, or historically deposited waste is encountered during the site bulk excavation phase, the contractor will notify Fingal County Council and provide a Hazardous / Contaminated Soil Management Plan, to include estimated tonnages, description of location, any relevant mitigation, destination for disposal/treatment, in addition to information on the authorised waste collector(s). Only authorised facilities will be used and as a result of this, the potential impacts at any authorised receiving facility sites will have been adequately assessed and mitigated as part of the statutory consent procedures;
- Waste generated by construction workers will be stored in wheelie bins on site and it will be collected by an appropriately authorised waste collector. All wastes generated on site will be sent for recycling, recovery, or disposal to a suitably licensed or permitted waste facility; and
- All waste quantities and types will be recorded and quantified, and records will be retained onsite for the duration of the construction phase.

These mitigation measures will ensure that the waste arising from the construction phase of the Proposed Development is dealt with in compliance with provisions of the Waste Management Act 1996, as amended, associated Regulations and Litter Pollution Act 1997, and The National Waste Management Plan for a Circular Economy 2024-2030. The mitigation measures will also ensure optimum levels of waste reduction, reuse, recycling and recover are achieved and will promote more sustainable consumption of resources.

The Contractor will have the responsibility to record resource and waste management at the site in line with the Resource and Waste Management Plan (RWMP). Some of the principal duties and responsibilities of this role include:

- Report to Project Manager on the management of resources and waste at the site;
- Identify all destinations for resources taken off-site;
- Address end-of-waste and by-product notifications with the EPA, where applicable;
- Maintain full records of all resources (both wastes and other resources) for the duration of the project;
- Delegate responsibility to sub-contractors, where necessary;
- Coordinate with suppliers, service providers and sub-contractors; and
- Prioritise waste prevention and resource salvage.

15.6.3 Operational Phase

As previously stated, an Operational Waste Management Plan (OWMP) has been prepared by Enviroguide (2025) for the Proposed Development. A waste strategy is presented in the OWMP which considers legal requirements, policies, and best management guidelines. This plan also demonstrates that the Waste Storage Area (WSA) has been incorporated within the design of the Proposed Development.

Implementation of the OWMP will ensure that a high level of recycling, reuse, and recover at the Proposed Development during the operational phase. All materials that are considered recyclable will be segregated and separated at source to reduce costs from the waste collector and ensure maximum diversion of material from landfill. The waste strategy presented in the OWMP will provide sufficient storage capacity for the estimated quantity of segregated waste. The designated WSA will provide sufficient room for the required receptacles in accordance with the details of this strategy.

As outlined in the OWMP, it is intended to ensure that the highest possible levels of waste reduction, waste reuse and waste recycling are achieved for the Proposed Development. Specifically, the OWMP will aim to achieve waste prevention, maximum recycling and recovery of waste with a focus on diversion of waste from landfill wherever possible.

It will be a condition of any management contract at the development that adequate budgets are in place for the provision of all required waste management services including a four-bin system for the collection of separate Organic (food) Waste, Dry Mixed Recyclables (DMR), Mixed Municipal Waste (MMW) / General Waste and Glass from the apartments and duplexes.

The Management Company appointed will be required to continually monitor the performance of the waste management system. This will include routine visual checks of the WSAs to ensure that all bins collected are returned to the WSAs and to ensure this area is maintained so as not to cause any environmental nuisance to residents. These checks will also assess if the bins are in good condition or need to be replaced where damage is identified.

Provision for bin cleaning will be included in the contract with the waste management contractor appointed to ensure the provision of bin cleaning services or replacement of clean bins by the waste contractor.

The Management Company will review all annual waste reports from the Waste Collection Company appointed to ensure that the waste collected is in line with the European recycling targets. Where poor recycling rates are noted information leaflets will be recirculated to all residents which will include information on what materials can be recycled and the waste streams that can be placed in bins. Residents will also be reminded of legal obligations where applicable. Further communication strategy to engage tenants and owner occupiers in good waste management practices will be adopted if deemed necessary.

Each appointed Waste Contractor must hold a valid waste collection permit to transport waste which is issued by the National Waste Collection Permit Office (NWCPO). Waste treatment facilities must also be appropriately permitted (Waste Facility Permit or Certificate of Registration) or licensed by the Local Authority or Environmental Protection Agency to accept the waste. The Management Company appointed will be responsible for ensuring that all Waste Contractors hold the appropriate authorisations.

The OWMP has reviewed policy alongside best practice guidance and recommendations for sustainable waste and recycling management arrangements for the Proposed Development and ensures a high level of recycling, reuse and recovery at the development and also ensures that waste management is carried out in accordance with the requirements of the Fingal Development Plan 2023-2029 and Ireland's National Waste Policy.

15.7 Residual Impact of the Proposed Development

This section assesses the potential significant impacts which remain after the mitigation measures are implemented at the Proposed Development (Plot 1 and Plot 2).

15.7.1 Construction Phase

The residual effects on waste management are considered slight, neutral, direct and short-term, this is due to:

- The prevention and mitigation measures proposed within this and other chapters of the EIAR;
- Compliance with national legislation and the allocation of adequate time and resources dedicated to efficient waste management practices; and
- Continued use of permitted/licensed waste hauliers and facilities. Waste removed from the facility will be managed appropriately and will avoid environmental impacts or pollution. In addition, the correct management and storage of waste will avoid litter or pollution issues at the site.

15.7.2 Operational Phase

Waste materials will be generated on an ongoing basis during the operational phase; these will for the most part consist of municipal waste and recyclable materials. Careful management of these, including segregation at source, will help to ensure a high level of waste recycling, reuse, and recovery at the development. Given the provision of appropriate facilities, and their correct use by residents, environmental impacts (e.g. litter, contamination of soil or water, etc.) arising from operational waste storage and removal are expected to be minimal. The use of suitably licensed waste contractors will ensure compliance with relevant legal requirements and appropriate off-site management of waste. With the implementation of the proposed operational waste management measures, the Proposed Development is not expected to have a significant environmental impact with respect to operational waste. The likely effect of the operational phase on waste management will be neutral, direct and slight in the long-term.

15.7.3 Worst Case Impact

A worst-case scenario would be where a previously unclassified hazardous waste stream arose on the site during excavations, which was not identified and segregated appropriately and resulted in the contamination of a non-hazardous waste stream, such as soil and stones, resulting in a large volume of hazardous waste that would require specialist removal and treatment. Additionally, the contaminated soil and stones would no longer be fit for use for fill and landscaping and would need to be replaced with imported materials.

15.8 Monitoring

The monitoring measures discussed are applicable to Plot 1 and Plot 2.

15.8.1 Construction Phase

The site control measures to manage and minimise waste include:

- Signage on the site office/welfare bins to separate them as environmental/domestic waste bins; and
- Briefing for all sub-contractors via induction handouts.

The Resource Manager (RM) will be responsible for conducting ongoing resource audits at the site during the construction phase. The audit protocol will be risk based and focus on key issues of concern but will include as minimum:

- Adequacy of site signage and need for any repairs or upgrades;
- Adequacy of storage infrastructure and need for any repairs or upgrades;
- Compliance with resource segregation protocols and observed contamination of any resource streams;
- Assessment of observed Contractor and Sub-Contractor work practices for compliance with the RWMP;
- The RM will undertake a review of all records of wastes and resources generated on-site and transported off-site periodically through the construction phase. If waste movements are not accounted for, the reasons for this are to be established to understand why the record keeping system has not been maintained and implement corrective actions if needed;
- The resource records will be compared with established targets for the site (e.g., reuse of resource target or recycling waste target);
- Examining material management on-site to determine where the largest percentage of residual waste generation is occurring. The waste management methods for each material type will be reviewed in order to highlight how project contract targets can be achieved; and
- Issue corrective actions (training, penalties, etc.) as required to site operatives where deviations of the RWMP are observed.

15.8.2 Operational Phase

The building management company and future residents will be required to maintain the bins and storage areas in good condition. The waste strategy presented in the OWMP will provide sufficient storage capacity for the estimated quantity of segregated waste. The designated areas for waste storage will provide sufficient room for the required receptacles in accordance with the details of this strategy.