

Environmental Impact Assessment Report

Chapter 19

Waste

Volume 2 Part 5



19 WASTE

19.1 Introduction

This Chapter assesses the waste management aspect of the 3FM Project. It discusses the potential waste streams that will be generated during the construction and operation phases of the 3FM Project. 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 has been identified.

19.2 Assessment Methodology

A quantitative assessment of likely effects in relation to waste has been undertaken. The assessment comprises the following stages:

- A review of applicable legislation and policy;
- A review of the Proposed Development design, undertaken in consultation with the project design team to estimate the waste generation during the various phases of construction;
- Determining waste arising from the operational phase of the development;
- Consideration of likely interactions between the proposed development and the current site conditions;
- Identification of possible impacts;
- Assessment of impacts;
- Identification of measures and solutions to avoid, reduce or remedy potential impacts; and
- Assessment of residual impacts, taking account of mitigation measures.

19.3 Assessment Criteria

19.3.1 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, with specific regard to: the sensitivity or importance (value) of receptors (Table 19.1) and the magnitude of impact on these receptors; and the extent to which primary, secondary and tertiary measures are expected to minimise impacts and effects¹. The above assessment criteria was used for the 3FM Project.

¹ Assessing sensitivity of waste (Section 10.2.2) IEMA guide to Materials and Waste Environmental Impact Assessment, March 2020.

Table 19.1 Importance or Sensitivity Matrix Definitions¹

Importance / Sensitivity of Resource or Receptor				
Across construction and/or operational phases, the baseline/future baseline (i.e. without development) or regional inert and non-hazardous landfill void capacity is expected to be...				
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.

19.3.2 Assignment of Magnitude

Where the construction phase is being assessed, the magnitude of impact is considered from the point at which site access is gained, through demolition, site remediation, enabling works, and construction, to development commissioning (Table 19.2).

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 19.2 Magnitude of Impacts 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%.

19.3.3 Significance of Effects

The assessment of significance will be based on the matrix outlined in Table 19.3 below.

Table 19.3 Assessment of Significance Matrix²

Sensitivity (or value) of receptor	Magnitude of Impacts				
	No Change	Negligible	Minor	Moderate	Major
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

19.3.4 Determining whether an effect is significant, or not

Once the effect threshold has been determined, Table 19.4 provides how the Waste Topic Leads may determine whether environmental effects are potentially significant, or not.

Where an impact is assessed as ‘slight or moderate’ (i.e. where it straddles the boundary between ‘significant’ and ‘not significant’) professional judgement is used in combination with domestic and European Union guidance to reach a final conclusion. This cautious approach represents a recognition on the part of Dublin Port Company of its responsibility for managing materials and waste sustainably, with a view to achieving sustainable resource management and contributing to the development of a more circular economy.

Table 19.4 Overall Significance of Effect²

Effect	Waste
Neutral	Not significant
Slight	
Moderate	Significant
Large	
Very Large	

19.4 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

² IEMA guide to Materials and Waste Environmental Impact Assessment, March 2020.

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, one in which resources are kept in use for as long as possible, the maximum value of the resources is extracted whilst in use, then products and materials are recovered and regenerated at the end of life³ (Figure 19.1).

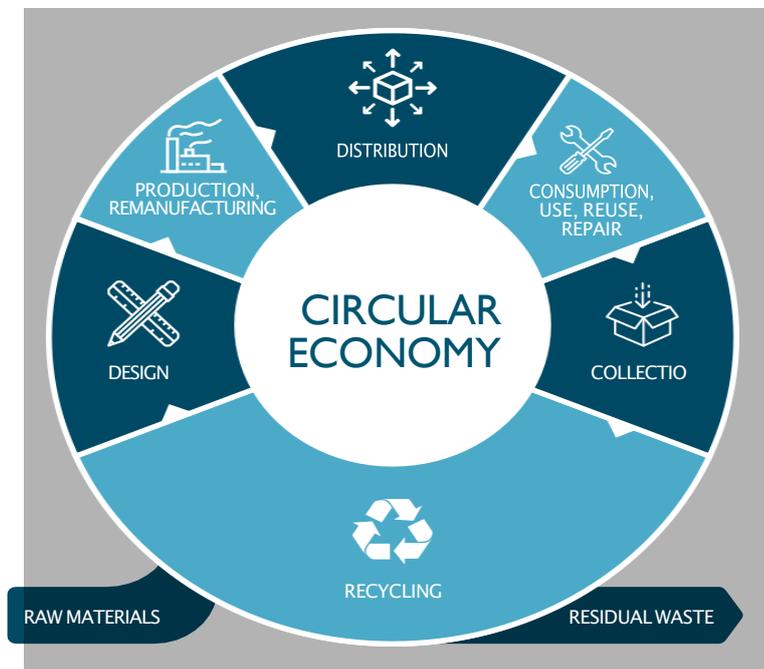


Figure 19.1 The Circular Economy³

Most of the waste generated from the 3FM Project will be classified as Construction and Demolition Waste (CDW). CDW is not clearly defined in Irish legislation, however guidance from statutory bodies provides assistance in defining CDW in the terms set out below.

The Government of Ireland's Waste Action Plan for a Circular Economy 2020-2025 (WAP) defines CDW as "waste from any building works, demolition and development (including transport infrastructure) and National Waste Management Plan for a Circular Economy 2024-2030 defines CDW as "Waste generated by construction and demolition activities". .

The Department of the Environment, Community and Local Government, in 2006, previously 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 activities⁴.

The Environmental Protection Agency (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

³ National Waste Management Plan For A Circular Economy 2024-2030 Volume I Current Situation And Challenges Link <https://mywaste.ie/sustainability/circular-living/national-waste-management-plan-for-a-circular-economy-2024-2030/>

⁴ Department of the Environment, Community and Local Government. 2006. Best Practice Guidelines on the Preparation of Waste Management Plans for Construction & Demolition Projects.

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)⁵.

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

The EU (Waste Framework Directive 2008) 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 transposition into Irish law.

The following definition for backfilling has been included National Waste Management Plan for a Circular Economy 2024-2030 .

“ Any recovery operation where suitable non-hazardous waste is used for purposes of reclamation in excavated areas or for engineering purposes in landscaping. Waste used for backfilling must substitute non-waste materials, be suitable for the aforementioned purposes, and be limited to the amount strictly necessary to achieve those purposes”.

19.5 Relevant Guidance and Legislation

19.5.1 Waste Management Policy

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

National Policies, Plans, Strategies and Legislation such as:

⁵ EPA, National Waste Report 2012

<https://www.epa.ie/publications/monitoring--assessment/waste/national-waste-statistics/national-waste-report-2012.php>

- National Waste Management Plan For A Circular Economy 2024-2030;
- 2020 Programme for Government;
- The Climate Action Plan 2023;
- The Whole of Government Circular Economy Strategy 2022 - 2023;
- The Waste Action Plan for a Circular Economy – Ireland’s National Waste Policy 2020 – 2025 ;
- The National Food Waste Prevention Roadmap 2023-2025;
- The National Policy Statement on the Bioeconomy 2018;
- National Hazardous Waste Management Plan 2021 – 2027, EPA, 2021;
- National Wastewater Sludge Management Plan, 2016-2021;
- Waste Management Act 1996 (as amended);
- Circular Economy and Miscellaneous Provisions Act 2022;
- By-Products (Article 27);
- End-of-Waste (Article 28);
- Planning guidelines for future developments published by the DECLG;

19.5.2 Irish legislation that impacts CDW management

CDW waste 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 1996 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 the conditions attached to that permit. The details of the waste collection permit system are set down in the Waste Management (Collection Permit) Regulations S.I. No. 820 of 2007 as amended. Offaly County Council has been appointed as the National Waste Collection Permit Office (NWCPO).

Authorisation of Waste Facilities: The Waste Management Act 1996 contains a hierarchy of control systems, with the most stringent of these being licensed by the EPA. Local authorities are generally responsible 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:

- 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.
- 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 as amended 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: These are issued by local authorities under the Waste Management (Facility Permit and Registration) Regulations, S.I. No. 821 of 2007 (as amended). 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 Environmental Protection Agency (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.

Specifically in relation to the waste management requirements at port facilities, a summary of this legislation is contained within the legislative summary of Dublin Port Waste Reception and Handling Plan 2023 contained in Appendix 19-1.

19.5.3 National Waste Policy in Ireland

The statutory basis for waste management policy in Ireland comes from the Waste Management Act 1996 (as amended). 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. Following reform of local Government structures in 2014 this reduced the number of groupings further from ten to three, which were the Eastern & Midlands, Southern and Connacht & Ulster.

The Waste Action Plan for a Circular Economy 2020 – 2025 called for the replacement of the existing three waste management plan with a single National Waste Management Plan containing targets for reuse, repair, resource consumption and a reduction in contamination. The single Draft National Waste Management Plan for a Circular Economy was duly published in May 2023. This single Plan, which is intended to replace the existing regional plans, sets out a framework for the prevention and management of waste in Ireland for the period 2023 to 2029. Following a consultation process the National Waste Management Plan for a Circular Economy 2024-2030 was published in 2024. This Plan seeks to influence sustainable consumption and prevent the generation of waste, improve the capture of materials to optimise circularity and enable compliance with policy and legislation. In accordance with this plan CDW accounted for 60%, 9.0 million tonnes, of all waste generated within the state in 2021. In terms of waste management planning the National Waste Management Plan for a Circular Economy set out national target of 2% reduction in CDW per year. The plan also set out 16 'Focus Areas' identified for the assignment of targeted policies and priority actions to support the achievement of the Plan ambition and targets. This includes Focus Area 8: Construction and Demolition Waste.

The Circular Economy and Miscellaneous Provisions Act 2022 has become law and supports Ireland's move from a linear model to a circular economy that retains the value of resources in our economy for as long as possible.

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 Climate Action Plan 2023 has also set out targets to reduce the reliance on landfill disposal as follows;

- Limit diversion of biodegradable municipal waste to landfill to a maximum limit of 427,000 tonnes; and
- Reduce the amount of municipal waste landfilled to 10% by 2035.

In addition, a number of measures have been introduced nationally to prevent materials from becoming waste from construction and demolition. In 2022, the EPA published consultation papers on National By-Product criteria⁶ for two construction waste streams:

- Greenfield soil & stone used in developments; and
- Road Plannings as asphalt pavement material, in both milled and slab form, accepted at Reclaimed Asphalt Pavement plants.

⁶ EPA 2022 Consultation Paper Regulation 27(7) National By-Product Criteria for greenfield soil & stone used in developments
<https://www.epa.ie/publications/licensing--permitting/waste/consultation-paper--regulation-277-national-by-product-criteria-for-greenfield-soil--stone-used-in-developments.php>

Two end-of-waste operators (Integrated Materials Solution and Starrus Eco Holdings Limited, Panda) have been licenced to recycle aggregates into product ((Decision on Article 28 (Aggregate))⁷)

19.5.4 Regional Waste Policy

19.5.4.1 Dublin City Development Plan 2022-2028

The Dublin City Development Plan (2022-2028) is a plan which sets out how the city will develop to meet the needs of all residents, workers and visitors. The plan's is designed to:

- guide growth and development,
- provide a strategy to achieve proper planning, and
- show how we will achieve sustainable development, that is development that meets our needs now and won't comprise future generations meeting their needs.

The Development Plan sets out a number of policies. Chapter 9: Sustainable Environmental Infrastructure, as well as Chapter 15: Development Standards, seek to establish a more sustainable approach to waste, based on circular economy principles.

Waste policies with a particular relevance to 3FM Project are:

Sustainable Waste Management

- To support the principles of the circular economy, good waste management and the implementation of best practice in relation to waste management, in order for Dublin City and the Region to become self-sufficient in terms of resource and waste management, and to provide a waste management infrastructure that supports this objective. To support opportunities in the circular resource efficient economy in accordance with the National Policy Statement on Bioeconomy (2018).
- To prevent and minimise waste generation and disposal, and to prioritise prevention, recycling, preparation for reuse and recovery in order to develop Dublin as a circular city and safeguard against environmental pollution.

Segregated Storage and Collection of Waste Streams

- Segregated Storage and Collection of Waste Streams require new commercial and residential developments to include adequate and easily accessible storage space that supports the separate collection of as many waste and recycling streams as possible, but at a minimum general domestic waste, dry recyclables and food waste as appropriate.

Eastern-Midlands Region Waste Management Plan

- To support the implementation of the Eastern Midlands Regional Waste Management Plan 2015–2021 and any subsequent plans in order to facilitate the transition from a waste management economy towards a circular economy.

⁷ <https://www.epa.ie/publications/licensing--permitting/waste/consultation-paper-regulation-277-national-by-product-criteria-for-road-planings-used-in-rap-plants.php>

The Eastern Midlands Regional Waste Management Plan 2015–2021 will be replaced by the National Waste Management Plan for a Circular Economy. A draft of this plan was published in May 2023 and final plan was published in 2024.

19.5.5 Other Relevant Plans/Guidance

19.5.5.1 Best Practice Guidelines, EPA 2021⁸

Best Practice Guidelines for the preparation of resource and waste management plans for construction and demolition projects address the best practice approach for the following phases of a project:

- Prior to Construction – including the stages of design, planning and procurement in advance of works on site (in the previous 2006 guidelines this was referred to as the “outline or preliminary plan”); and
- During Construction – relating to the effective management of resources and wastes during construction or demolition operations (in the previous 2006 guidelines this was referred to as “the detailed plan”).

The purpose of these guidelines is to provide a practical and informed approach which is informed by best practice in the prevention and management of CDW and resources from design to construction of a project, including consideration of the deconstruction of a project.

Project developers are to implement these practices and document these activities into a project Resource Waste Management Plan (RWMP). The requirement of the RWMP is dependent on the scale and complexity of the project as follows;

Developments above a certain threshold are classed as Tier-2 projects. Tier-2 projects require a bespoke RWMP which should follow the requirements set out in the guidelines and meet the minimum content requirements. The 3FM Project is a Tier-2 project.

DPC will prepare a RWMP for the 3FM Project in accordance with best practice and the relevant guidelines. A draft plan has been included in the Construction Environmental Management Plan submitted with this EIAR.

19.5.5.2 Dublin Port Waste Reception and Handling Plan 2023

DPC currently operates a port waste management plan ‘Dublin Port Waste Reception and Handling Plan 2023’ contained in Appendix 19-1.

“The purpose of this plan is to ensure that the needs of potential users and waste regulators are taken into account when planning and operating port waste reception facilities; to ensure that all mariners are aware of the requirement to transfer ashore their ship waste at every port they visit the location, cost and procedures for using the facilities and in Dublin Port. Also, it is a means of informing the ships masters and their agents/terminal operators regarding the legislative requirements and the consultation arrangements by the port for the future development of adequate facilities within the port.”

⁸ <https://www.epa.ie/publications/circular-economy/resources/construction--demolition-guidelines.php>

19.5.5.3 Climate Action Plan 2021 – Circular Economy & Green Procurement

The Department of the Environment, Climate and Communications (DECC) published the 'Climate Action Plan 2023' in December 2022, which provides a detailed plan to achieve a 51% reduction in overall greenhouse gas emission by 2030 and sets a path to achieve net-zero emissions by 2050. The Department of Public Expenditure and Reform (DPER) and the New Economy and Recovery Authority (NewERA) are key stakeholders in the delivery of Action 55 '*Develop Framework for commercial semi-State sector to address climate action objectives*' with the DECC as the assigned lead. The commercial semi-State sector refers to a group of 22 companies who have set out a series of five commitments in relation to climate action objectives. It includes the Dublin Port Company. Commitment 4 is promoting '*Circular Economy and Green Procurement*'.

The NewERA has set out two target approaches that each semi-State company would commit to working towards for Commitment 4 '*Circular Economy and Green Procurement*':

- 4.1: Demonstrate leadership by example in Ireland's transition to a circular economy, having regard to the proposals and initiatives of DECC, the OGP and the EPA; the Whole of Government Circular Economy Strategy; the targets relating to waste reduction set out in the CAP 2021; and the statutory requirements set out in the Circular Economy and Miscellaneous Provisions Act 2022.
- 4.2: Engage with the OGP and other Central Purchasing bodies to use procurement frameworks which include relevant environmental considerations; include in annual reports the corporate policy around GPP, measures taken to give effect to GPP and the data around measuring and monitoring this activity. Consider introducing a plan for the incremental growth of GPP. Incorporate circular economy principles in GPP.

19.6 Existing Environment

19.6.1 Current Operational Overview

The principal activities of DPC are to facilitate the efficient flow of goods and passengers through Dublin Port. The company provides the infrastructure, facilities, services and hard standing areas to meet with the needs of their customers and to allow the transfer of goods and passengers between sea and land.

With a total throughput of 36.7 million tonnes in 2022 and a 5.2% growth year on year⁹ DPC has long recognised the importance of sustainability and the environment, adopting an Environmental Management System (EMS) in October 2007 to manage the environmental impacts associated with port activities and to commit to continued improvements in environmental management. DPC also became part of the EcoPorts' network in 2008 and in 2023 renewed its certification through the EcoPorts environmental management standard (PERS) for the sixth time¹⁰. DPC has a series of environmental objectives and targets as part of its PERS certified Environmental Management System. DPC continues to implement measures and monitor its activities and procedures to audit compliance with its own waste policy and regulatory requirements to ensure that Port operations are managed sustainably with the ultimate objective of making the circular economy a reality within Dublin Port operations. The DPC Environmental Report published in 2023 details objectives and targets set in accordance with DPC

⁹ <http://www.dublinport.ie/trade-statistics>

¹⁰ Dublin Port Yearbook 2023 http://www.dublinport.ie/wp-content/uploads/2023/03/dublin_port_yearbook_2023_web.pdf

Environmental Policy including waste management performance. Dublin Port has consistently achieved a recycling rate of over 95% since 2013 with a peak of 98% in 2016.”

19.6.2 Characteristics of Current Wastes

Current wastes arising at the Port are typically non-hazardous, and are classified in accordance with local procedures, national waste classification requirements, and relevant waste legislation. Waste collection is divided into three main categories:

- Ships' Waste
- Port Waste
- Cargo Waste

Reception and storage are the key elements to the successful management of port waste reception facilities. All waste generated and/or received at Dublin Port is currently managed and disposed by licensed waste contractors. Details are provided in Table 19.5.

Table 19.5 Types of waste produced and current management route¹¹

Waste Type	Details		Management Route
Ship Waste	International catering waste	This accounts for all waste generated by a ship but does not include cargo waste.	Dublin Port provides adequate reception facilities for ship generated waste. Normal waste collection times are between 08:00 – 20:00 daily. A compactor (15m ³) is located in the Emergency Storage Yard on T10 Link Road for the collection of Ships' International Waste. The collection of ships waste within Dublin Port will be carried out by Panda who have been subcontracted by ENVA to fulfil this aspect of the waste management contract. All ships waste is classed as International Catering Waste (ICW) and will be disposed of in the prescribed manner. Receiver of waste will be Covanta, permit NWCPO-13-11193-06. The Waste Contractor is licenced by the Dept. of Agriculture, Food & the Marine to transport International Catering Waste (ICW) to an approved waste reception facility.
	Hazardous waste	MARPOL Annex I Oily wastes, II Noxious liquid substances, and IV Sewage.	Arrangements for the discharge of Annex I, II and IV waste will be made directly between the agent, operator, ships Master and the waste contractor. Records of receipts for oil/hazardous waste will be maintained by ships agents. MARPOL Annex I, II and IV wastes will be removed by ENVA as a direct charge to their ENVA Portlaoise facility.
Port Waste	Port waste is all non-ship waste generated by Dublin Port Company but does not include waste generated by private companies on the DPC estate who will		Port waste is segregated into general waste and recycling waste and managed accordingly. General waste bins and recycling bins are located at Port Centre, Port Operations Centre and Maintenance and Services. Waste is segregated and receipts are provided for its collection and disposal and are available for inspection. The contractor for the removal of Ships' Waste is also responsible for the removal of Port Waste.

¹¹ Dublin Port Waste Reception and Handling Plan 2023

Waste Type	Details	Management Route
	provide for their own waste disposal.	All general waste collected from the Port is processed for Refuse Derived Fuel (RDF) as part of Panda's recycling and recovery services.
Cargo Waste	This is waste associated with the collection / discharge of cargo.	The collection and disposal of cargo waste falls under the responsibility of the various stevedoring companies licensed to trade within Dublin Port. Cargo waste will be collected and disposed of in accordance the Stevedoring companies own internal waste management plans.

19.6.3 Current Method of Management / Receiving Environment

19.6.3.1 Pre-treatment and Recovery Infrastructure

Pre-treatment infrastructure covers a wide variety of facilities in the region, but is mainly mechanical sorting, separation and processing plants which can vary in scale and sophistication. There are no pre-treatment facilities or processes within the port facilities.

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, under a waste licence, or by the local authorities, under a waste facility permit (WFP) or certificate of registration (CoR).

According to the Construction & Demolition Waste Soil and Stone Recovery / Disposal Capacity - UPDATE REPORT 2020¹² there were at year end 2018, 106 authorised facilities in the Eastern-Midlands Region (EMR) for soil and stone acceptance including:

- Four active licenced soil recovery facilities;
- Six licenced soil recovery facilities due to start providing capacity;
- Four active inert landfills
- Forty-nine permitted facilities; and
- Forty-three registered facilities with CoRs;

Table 19.6 to 19.9 summarises the soil recovery facility capacities in the EMR in 2018 as per the 2020 Report.

Table 19.6 Licenced Soil Recovery Facility Capacities EMR 2018

County	No. of Facilities*	Annual Capacity (Application Stage) Tonnes	Annual Capacity (Licenced Un- commenced) Tonnes	Annual Capacity (Active and Available) Tonnes
Dublin (Fingal)	3	532,833	-	1,900,000
Meath	5	-	670,000	167,400
Kildare	5	740,000	570,000	344,000

¹² Construction & Demolition Waste Soil and Stone Recovery / Disposal Capacity - UPDATE REPORT 2020

<https://www.southernwasteregion.ie/sites/default/files/National%20C%20%20D%20Report%20Dec%202020%20for%20Publication.pdf>

County	No. of Facilities*	Annual Capacity (Application Stage) Tonnes	Annual Capacity (Licenced Un-commenced) Tonnes	Annual Capacity (Active and Available) Tonnes
Wicklow	2	-	300,000	-

* This includes closed facilities and facilities at application stage.

Table 19.7 Inert Landfill Capacities EMR 2018

Region	No. of Facilities	Permitted Capacity Tonnes (Lifetime)	Remaining Capacity Tonnes (Lifetime)
EMR	4	-	6,100,000

Table 19.8 Permitted Soil Recovery Facility Capacities EMR 2018

Region	No. of Facilities	Permitted Capacity Tonnes (Lifetime)	Remaining Capacity Tonnes (Lifetime)
EMR	49	2,665,197	1,333,523

Table 19.9 Registered Soil Recovery Facility Capacities EMR 2018

Region	No. of Facilities	Permitted Capacity Tonnes (Lifetime)	Remaining Capacity Tonnes (Lifetime)
EMR	43	394,934	188,288

The 2020 report found that licensed capacity is most prominent in the EMR which has a healthy supply of active capacity and substantial new capacity due to come on stream. The EMR contains 80% of the active national capacity.

The National Waste Management Plan for a Circular Economy stated that there is significant capacity remaining at consented soil recovery facilities and the pending national Article 27 decision on greenfield soil and stone should reduce demand for this capacity but there is a capacity shortfall for facilities to treat non-inert non-hazardous wastes and dedicated facilities for this stream need to be supported and expanded to meet the projected shortfalls. This waste stream can no longer be allowed to compete with Municipal Solid Waste for void space in Municipal Solid Waste landfills. Tables 19-10 to 19-12 summaries the current capacity in Ireland as per 2022.

Table 19.10 Soil Recovery Facilities in Ireland 2021

Type of Authorisation	No. of Facilities	Soil Waste Accepted in 2020 (tonnes)	Remaining Available Treatment Capacity for Soil Waste from 2022 (tonnes)
Licensed	16	2,773,687	25,272,206
Permitted	230	2,436,586	6,686,156
Registered	228	578,470	906,948

Type of Authorisation	No. of Facilities	Soil Waste Accepted in 2020 (tonnes)	Remaining Available Treatment Capacity for Soil Waste from 2022 (tonnes)
Total	474	5,788,746	32,865,310

Soil recovery facilities accept uncontaminated soil waste for recovery, primarily sourced from greenfield sites. Inert landfill facilities accept wastes which comply with the waste acceptance criteria limits for inert landfills as described in the EU Landfill Directive. These are all located in the EMR.

Table 19.11 Operational Facilities accepting Inert Waste in Ireland

Facility	Location	Annual Licensed Capacity (tonnes)	Accepted 2019 (tonnes)	Accepted 2020 (tonnes)	Accepted 2021 (tonnes)	Accepted 2022 (tonnes)	Remaining void space Inert Waste as per 2022 ¹³	Expected date to have used full capacity
Integrated Materials Solution (W0129-02)	Dublin	500,000	420,392	487,131	421,520	342,083	3,060,000	2035
Walshestown Restoration Ltd. (W0254-01)	Kildare	330,000	229,650	283,986	329,571	271,743	1,360,650	2033
Kyletalesha Landfill (W0026-03)	Laois	47,100	25,085	28,597	2,218	71,554	50,000	2023
Total		877,100	675,127	799,714	753,310	667,380	4,470,650	

The number of landfill sites accepting municipal waste in Ireland for disposal has decreased from seven in 2016 to three facilities in 2022. Corranure Landfill in Cavan currently only accepts material to complete cell capping (including non-hazardous soil and stone is material that does not meet the hazardous or inert waste acceptance criteria limits). The site has an annual licensed capacity of 45,000 tonnes but has been excluded from Table 19.12 as it is no longer accepting Municipal Waste.

Table 19.12 Operational Municipal Waste Landfills in Ireland¹³

Facility	Location	Annual Licensed Capacity (tonnes)	Disposed 2019 (tonnes)	Remaining Capacity as per 2022 ¹³	Expected date to have used full capacity
Operational Landfills accepting Municipal Waste					
Knockharley Landfill (W0146-02) ¹²⁵	Meath	188,000	65,992	3,797,802	2042
Ballynagran Residual Landfill (W0165-02)	Wicklow	150,000	202,994	503,165	2026

¹³ EPA June 2023 from EPR return

Facility	Location	Annual Licensed Capacity (tonnes)	Disposed 2019 (tonnes)	Remaining Capacity as per 2022 ¹³	Expected date to have used full capacity
Drehid Waste Management Facility (W0201-03)	Kildare	120,000	111,454	475,694	2027
Total		458,000	380,440	4,776,661	

19.7 Proposed Scheme Design – Waste-related elements

A detailed description of each element of the 3FM Project is presented in Chapter 5 of the EIAR. The construction sequence for the overall project is also provided in Chapter 5 of the EIAR. In relation to waste, the key project elements are set out below and relate to three distinct phases: demolition; construction and operation.

1. Demolition and Site Clearance Works

Construction and Demolition waste (CDW) will arise from the demolition works to be undertaken under the 3FM Project as shown in Table 19.13 below.

Table 19.13 Summary Of Proposed Demolition Works

Element	Description
Existing concrete 'dolphins' at Tom Clarke Bridge	Two piled concrete dolphin structures
Maritime Village	Stella Maris Rowing Club (2 nr building) Poolbeg Yacht & Boat Club (1nr building)
MTL Terminal	MTL Container Terminal Buildings & Warehouses - three warehouses and Various combinations of portacabins and mobile offices Existing Pier (nib structure) Existing Ramp 3 Caisson Structures
Sludge Jetty	Access Viaduct, Jetty Head, Walkway and Mooring Dolphins
ESB Jetties	Access Viaduct/Approach Bridge, Jetty Head/ T-Head, Walkway/Footbridge, Intermediate Footbridge supports, Breasting Dolphins, Mooring Dolphins Miscellaneous Quay Furniture
ESB Weir	Walkway structure
Area L	Office Building: 2 storey Large and small garage

Element	Description
	Silo Building Pump House Sub-station Large Wall as part of the coal yard
Port Park	Office Building: 2 storey

The excavations works to be undertaken for the 3FM Project are shown in Table 19.14.

Table 19.14 Summary Of Proposed Excavations Works Based On Preliminary Design.

Project Area	Description
Area K	Excavations works are required to facilitate the development of Area K.
Area N	Excavations works are required to facilitate the access from Area N onto the ESB jetty and installation of new pipework based on preliminary design.
Roads required for 3FM Project	Excavations works are required to facilitate the new road networks.
Turning circle	Excavations works are required to facilitate the turning circle.
Area O	Excavations works are required to facilitate new retaining wall south of Area O.
Area L	Excavations works are required to facilitate the development of Area L.
Port Park	Excavations works are required to facilitate the development of Port Park & Wildflower Meadow

2. Construction Works

- General waste generated from the various construction works.
- If suitable engineered fill material or suitable CDW arising material is identified in the construction phase/sequencing then this material will be used as infill. Suitable CDW arising material will be used in the following construction activities;
 - It is proposed to raise the ground level of the Maritime Village site by an average in excess of 1.5m which will require an estimated 30,200 m³ of imported fill material or suitable engineered fill material/suitable CDW arisings,
 - Turning Circle 26,500 m³,
 - Area O 32,250 m³,
 - Area L 6,900 m³.
- An estimated 70,000m³ of Dredge Material from Poolbeg Marina which is not suitable for disposal at sea will require recovery/disposal.

3. Operational Stage

Waste materials will also arise from the operational phase of the 3FM Project, these are envisaged as falling under the same three headings as currently exist at the port, namely Ships' Waste, Port Waste, and Cargo Waste, as defined above.

19.8 Impact assessment

19.8.1 Assessment of Construction Effects

The predicted waste management impacts are assessed in accordance with Tables 19.1 to 19.3. Based on the 3FM Project proposals, the potential impacts associated with waste generation and management are considered in respect of three distinct phases: Demolition Phase; Construction Phase; and Operation and Maintenance Phase.

19.8.1.1 Demolition and Site Clearance Phase - Potential Impacts

Waste materials will be generated as a result of the proposed demolition of existing buildings. Waste arising from the proposed demolition phase will consist of several sub-waste streams, which are often mixed, depending on the amount of selective demolition and separate collection that will take place. A Demolition Survey will be required prior to any demolition work commencing in order to facilitate and maximise recovery of resources from demolition for beneficial reuse and recycling (See Table 19.13)

As per Table 19.15 below, it is envisaged that a portion of the demolition waste arising from the 3FM Project is likely to contain asbestos. 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) provide the legislative backdrop to all aspects of asbestos control in construction. All actions related to the removal and disposal of asbestos in the 3FM Project shall be carried out in accordance with these regulations.

Asbestos surveys

A number of asbestos surveys have been undertaken and are summarised in Table 19.15 below with further detail provided in Appendix 19-2.

Table 19.15 Asbestos Surveys

Element Surveyed	Confirmed Asbestos	Presumed/Strongly Presumed Asbestos
Kilsaran Concrete Plant	No asbestos containing materials identified.	-
Maritime Village	No asbestos containing materials identified	-
MTL Depot	Asbestos containing materials identified at one location.	Presumed/Strongly Presumed Asbestos identified at two locations
Sludge & ESB Jetties	Asbestos containing materials identified at seven locations.	Presumed/Strongly Presumed Asbestos identified at three locations
P&O Ferries RDAS_170918	Asbestos containing materials identified at one location.	Presumed/Strongly Presumed Asbestos identified at six locations
Old ESB Building_180423	Asbestos containing materials identified at 12 locations.	Presumed/Strongly Presumed Asbestos identified at twenty six locations
Hammond Lane (Multiple building/structure)	No visible asbestos containing materials identified.	Presumed/Strongly Presumed Asbestos identified at seven locations

Excavations

As shown in Table 19.13 there are a number of areas requiring excavations works to facilitate the proposed works required under 3FM Project. A preliminary ground investigation has been undertaken and detailed in Chapter 8 to inform and assess the geotechnical and geo-environmental characteristics of the soils, sediments and rock at the sites and to inform the preliminary design of the 3FM Project elements in support of environmental assessments and statutory consent applications.

The ground investigation works consisted of boreholes, sediment sampling and laboratory testing of samples collected from site. Further ground investigations will be required to inform the detailed design.

An area of vacant land known as '47A hardstand' is to be removed in order to facilitate the turning circle. A Waste Classification has been undertaken on the samples analysed to date and details are provided in Appendix 19-3.

The sampled material falls under the classifications of "Soil and Stones" (see Chapter 17, section 5.04) and "Non-Hazardous (see Chapter 17, section 5.03). If a material is classified as non-hazardous, then it may be accepted at a non-hazardous or an inert landfill subject to meeting Waste Acceptance Criteria (WAC). The WAC result for 3FM Project BH216 indicates that waste would be suitable for disposal at an inert landfill whilst the result for 3FM Project BH217 indicates that waste would be suitable for disposal at a non-hazardous landfill.

Asbestos fibres were noted at one borehole location within the proposed Port Park & Wildflower Meadow. As per Section 8.7 of this EIAR the mitigation measure required in relation to asbestos for the soft landscaping areas in Port Park & Wildflower Meadow, is the implementation of a clean cover barrier system of at least 600mm of clean imported or a "no dig" barrier such as a high visibility geotextile warning can be installed across the base of the excavation with the placement of clean materials above. Excavation of the existing hardstanding areas and areas of made ground/waste will be required to implement this clean cover barrier system and to comply with the required site levels. Where excavated material cannot be reused on site it will be transported and disposed or recovered through licenced operators and in accordance with national waste legislation. Hazardous waste such as asbestos will only be handled by a specialist contractor.

Demolition And Site Clearance

An estimation of material comprising concrete, masonry and bricks / blocks and steel from above ground demolition works plus material arising from cut and fill works across the site is provided in Tables 19-16 and 19-17. A summary of the anticipated demolition and site clearance phase impacts is also contained in Tables 19-16 and 19-17. Invasive species (Japanese Knotweed) has been detected on site. No Japanese Knotweed plant material or contaminated soil is to be removed from site for disposal (See Chapter 7). Should invasive species be identified within the site the mitigation listed in the invasive species management plan for the works will be enacted. This will include such measures as physical separation of the area, treatment by chemical treatment or excavation as appropriate. Japanese Knotweed can only be disposed off at a limited number of licenced facilities in Ireland.

Table 19.16 Demolition Phase Impact Assessment Summary

Elements	Description	Estimated Tonnage of Main Components	Sequencing ¹⁴	Potential significance of effect prior to mitigation
Turning Circle - Sludge Jetty	Access Viaduct, Jetty Head, Walkway and Mooring Dolphins	Concrete – 1,328 tonnes Steel – 799 tonnes	YR 03- YR 06	Moderate Potential to require off site reuse/recovery if reuse options onsite cannot be utilised. Possible Off site recovery End of Waste Decision for Concrete
Area L	Office Building: 2 storey Large and small garage Silo Building Pump House Sub-station Large Wall as part of the coal yard	Bricks/Blocks - 3,706 tonnes Steel - 2,766 tonnes Insulation - 3 tonnes	YR 03	Moderate Potential to require off site reuse/recovery if reuse options onsite cannot be utilised. Possible Off site recovery End of Waste Decision for Concrete
Maritime Village	Stella Maris Rowing Club (two buildings) Poolbeg Yacht & Boat Club (one building)	Concrete /Bricks - 14,435 tonnes Timber - 2,932 tonnes Slate – 1,804 tonnes Asphalt, Tar and Tar products – 1,353 tonnes Plasterboard – 902 tonnes Glass – 677 tonnes Metals – 451 tonnes	YR 10-YR 13	Moderate Potential to require off site reuse/recovery if reuse options onsite cannot be utilised. Possible Off site recovery End of Waste Decision for Concrete Possible asphalt being accepted at Reclaimed Asphalt Pavement plants.
Area N - ESB Jetties	Access Viaduct/Approach Bridge, Jetty Head/ T-Head, Walkway/Footbridge, Intermediate Footbridge supports,	Concrete – 3,956 tonnes Carbon steel pipeline, stainless steel pipeline, Galvanized steel pipe. 899 tonnes	YR 04-YR 06	Moderate Potential to require off site reuse/recovery if reuse options onsite cannot be utilised.

¹⁴ As per 3FM construction sequence

Elements	Description	Estimated Tonnage of Main Components	Sequencing ¹⁴	Potential significance of effect prior to mitigation
	Breasting Dolphins, Mooring Dolphins Miscellaneous Quay Furniture			Possible Off site recovery End of Waste Decision for Concrete
Area N - ESB Weir	Walkway structure	Concrete – 364 tonnes	YR 04-YR 06	Moderate Potential to require off site reuse/recovery if reuse options onsite cannot be utilised. Possible Off site recovery End of Waste Decision for Concrete
Existing dolphins at Tom Clarke Bridge	Two piled dolphin structures	Concrete – 485 tonnes Steel - 87 tonnes	YR 04-YR 06	Moderate Potential to require off site reuse/recovery if reuse options onsite cannot be utilised. Possible Off site recovery End of Waste Decision for Concrete
Area K MTL Terminal	MTL Container Terminal Buildings & Warehouses - three warehouses and Various combinations of portacabins and mobile offices Assume portacabins and mobile offices will be reused on site Existing Pier (nib structure) Existing Ramp 3 Caisson Structures	Concrete /Bricks – 9,177 tonnes Timber – 1,864 tonnes Slate – 1,147 tonnes Asphalt, Tar and Tar products – 860 tonnes Plasterboard – 574 tonnes Glass – 430 tonnes Metals – 287 tonnes Concrete – 2,024 tonnes Steel - 11,718 tonnes	YR 11-YR 13	Moderate Potential to require off site reuse/recovery if reuse options onsite cannot be utilised. Possible Off site recovery End of Waste Decision for Concrete Possible asphalt being accepted at Reclaimed Asphalt Pavement plants.
Port Park	Warehouse Building: 2 storey	Bricks/Blocks – 1,543 tonnes Steel – 952 tonnes	YR 13-YR 14	Moderate Potential to require off site reuse/recovery if reuse options onsite cannot be utilised.

Elements	Description	Estimated Tonnage of Main Components	Sequencing ¹⁴	Potential significance of effect prior to mitigation
				Possible Off site recovery End of Waste Decision for Concrete

Table 19.17 Excavation Phase Impact Assessment Summary

Element	Description	Estimated Volume (m ³)Of Excavations Based on Site Investigation to Date	Sequencing	Potential significance of effect prior to mitigation
Roads required for 3FM Project	Excavations works are required to facilitate the new road networks.	Concrete 3,693 m ³ Bituminous 5,539 m ³ Made ground 52,165 m ³	Throughout the project	Moderate Potential to require recovery/disposal to landfill if reuse options onsite cannot be utilised. Possible Off site recovery End of Waste Decision for Concrete Possible asphalt being accepted at Reclaimed Asphalt Pavement plants.
Area L	Excavations works are required to facilitate development	Concrete 18,145 m ³ Asphalt 1,680 m ³ Gravel 13,121 m ³	YR 13-YR 14	Moderate Potential to require recovery/disposal to landfill if reuse options onsite cannot be utilised. Possible Off site recovery End of Waste Decision for Concrete Possible asphalt being accepted at Reclaimed Asphalt Pavement plants.
Turning circle -	Excavations works are required to facilitate the turning circle. Construction and Demolition Wastes (including excavated soil from contaminated sites), Chapter 17 05 04: Soil and Stones other than those mentioned in 17 05 03	Soil and Stones 10,000 m ³	YR 03-YR 04	Moderate Potential to require recovery/disposal to landfill if reuse options onsite cannot be utilised.
Area N - ESB Jetties	Excavations works are required to facilitate the access from Area N onto the ESB jetty	Made ground 1,300 m ³	YR 04-YR 06	Moderate Potential to require recovery/disposal to landfill if reuse options onsite cannot be utilised.

Element	Description	Estimated Volume (m ³)Of Excavations Based on Site Investigation to Date	Sequencing	Potential significance of effect prior to mitigation
Area N	Excavations works are required to facilitate the access from Area N onto the ESB jetty and installation of new pipework based on preliminary design.	Made ground 2,760 m ³	YR 04-YR 06	Moderate Potential to require recovery/disposal to landfill if reuse options onsite cannot be utilised.
Area O	Excavations works are required to facilitate new surfacing	Concrete/Hardstanding 8,000 m ³	YR 13-YR 14	Moderate Potential to require recovery/disposal to landfill if reuse options onsite cannot be utilised.
MTL Terminal K Area K	Excavation for surfacing, drainage interceptors, linkspan recess and demolition of nib structure.	Concrete 24,874 m ³ Gravel Fill 73,191 m ³ Bitmac 7,493 m ³	YR 11-YR 13	Moderate Potential to require recovery /disposal to landfill if reuse options onsite cannot be utilised. Possible Off site recovery End of Waste Decision for Concrete Possible asphalt being accepted at Reclaimed Asphalt Pavement plants.
Port Park	Excavations works are required to facilitate development of Port Park & Wildflower Meadow	Concrete 7,500 m ³ Made Ground/Waste 8,000 m ³	YR 13-YR 14	Moderate Potential to require recovery /disposal to landfill if reuse options onsite cannot be utilised. There are currently no EPA-licensed waste disposal facilities for asbestos waste in Ireland. Possible Off site recovery End of Waste Decision for Concrete

19.8.1.2 Construction Phase - Potential Impacts

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.

CDW will arise from the construction phase. Typical waste materials arise from site management practices during the construction phase include 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, 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 material may, or may not be contaminated. The European Waste Codes (EWC) for typical waste materials that may possibly be generated during the construction phase are outlined in Table 19.18.

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.

If asbestos materials are not correctly identified, segregated and appropriately managed, there may be incorrect handling of the material which could have negative impacts on workers as well as environments both onsite and offsite.

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 19.19. It is expected that the majority of waste produced during construction will be suitable for recycling or reuse and will not require landfill disposal.

Table 19.18 Potential Materials Management During Construction Phase

Description	LoW	Management Option	Management Destination
Waste hydraulic oils *	13 01	Recycled or reused off site	Offsite to specialist contractor
Wastes of liquid fuels *	13 07	Recycled or reused off site	Offsite to specialist contractor

Description	LoW	Management Option	Management Destination
Packaging (including separately collected municipal packaging waste)	15 01	Recycled or reused offsite	Offsite to specialist contractor
Concrete	17 01 01	Crushed and reused on site if possible or recovery off site as a secondary aggregate	Onsite reuse/Off site recovery End of Waste Decision
Bricks	17 01 02	Crushed and reused on site if possible or recovery off site as a secondary aggregate	Onsite reuse/Off site recovery End of Waste Decision
Tiles and ceramics	17 01 03	Recycled or reused off site	Off site to specialist contractor
Mixtures of, or separate fractions of concrete, bricks, tiles and ceramics containing hazardous substances	17 06 01*	Recycled or reused off site	Off site to specialist contractor
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
Glass, plastic and wood containing or contaminated with hazardous substances	17 02 04*	Recycled or reused off site	Off site to specialist contractor
Bituminous mixtures, coal tar and products	17 03 01	Recycled or reused off site	Off site to specialist contractor
Bituminous mixtures containing other than those mentioned in 17 03 01	17 03 02	Recycled or reused off site	Off site to specialist contractor
Iron and steel	17 04 05	Recycled or reused off site	Offsite to specialist contractor
Metals	17 04 07	Recycled or reused off site	Off site to specialist contractor
Metal waste contaminated with hazardous substances	17 04 09*	Recycled or reused off site	Off site to specialist contractor
Soil and stones containing hazardous substances	17 05 03*	Recycled or reused off site	Off site to specialist contractor
Stone and soil other than that mentioned in 17 05 03*	17 05 04	Materials deemed unsuitable or not required for reuse on site and require management offsite	Off site to specialist contractor
Dredging spoil other than that mentioned in 17 05 05*	17 05 06	Materials deemed unsuitable or not required for reuse on site and require management offsite	Off site to specialist contractor

Description	LoW	Management Option	Management Destination
Insulation materials and asbestos containing construction materials	17 06 01* 17 06 03* 17 06 04 17 06 05*	Asbestos containing materials require careful removal and segregation and will be disposed of at a specialist hazardous waste landfill	Off site to specialist contractor Disposal at a 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	Off site to specialist contractor Disposal at licensed landfill
Mixed Construction and Demolition Waste other than those mentioned in 17 09 01, 17 09 02, 17 09 03	17 09 04	Materials deemed unsuitable for reuse or recycling and require disposal to suitably licensed landfill	Off site to specialist contractor Disposal at licensed landfill
Discarded electrical and electronic equipment other than those mentioned in 20 01 21, 20 01 23 and 20 01 35	20 01 36	Recycled or reused offsite	Offsite to specialist contractor
Other municipal waste	20 03	Recycled or reused offsite	Off site to specialist contractor

* Denotes hazardous materials

An estimated 70,000m³ or 6% of the total volume required to be dredged from Poolbeg Marina is Class 2 material making it unsuitable for disposal at sea will also require recovery/disposal. This area will be dredged in two phases:

50,000 m³ will be dredged - Year 10 October to March,

20,000 m³ will be dredged Year 11 October to March

A Waste Classification has been undertaken on the samples analysed to date and details are provided in Appendix 19-3.

The sampled material falls under the classifications of “Dredging spoil” (see Chapter 17, Section 5.06) and “Non-Hazardous”. If a material is classified as non-hazardous, then it may be accepted at a non-hazardous or an inert landfill subject to meeting WAC.

Only one sample was analysed for WAC and this indicated that the material is not suitable for an inert landfill (due to the presence of chloride and sulphate) and therefore may be accepted at a non-hazardous landfill.

Table 19.19 Construction phase impact assessment summary

Activities	Description	Estimated Quantities ¹⁵	Potential significant of effect prior to mitigation
It is envisaged that there will be construction related waste generated from the various construction works which includes		Estimated using benchmark of 11.1 tonnes of waste generated per 100m ² (gross internal floor area). Based on planning design this equates to Area K 3,038 m ² Area N 3510 m ² Area O 732 m ² Total 7,280 m ² This equates to 80,810 tonnes arising from construction over the duration of the project.	Neutral or Slight
Area K	Surplus construction materials including: <ul style="list-style-type: none">• concrete, bricks, tiles, cement and ceramics.• metals,• wood,• glass,• plastic etc Waste packaging, wrapping, formwork etc Waste cabling, pipework, ductwork etc	33,720 tonne	Neutral or Slight
Area N		38,960 tonne	Neutral or Slight
Area O		8,130 tonne	Neutral or Slight
Dredging	Dredge Material from Poolbeg Marina which is not suitable for disposal at sea	An estimated 70,000m ³ of Dredge Material from Poolbeg Marina will require recovery/disposal. The recovery/disposal will in order of preference, be: <ol style="list-style-type: none">1. Filled to berth 52/53 under a revised IE licence subject to availability of receptor capacity;2. Recovered at a soil recovery or soil treatment facility in Ireland subject to testing of the sediments in line with the selected facility licence at the time of the works;3. Recovered at a soil treatment facility in	Neutral or Slight

¹⁵ [Wst 01 Construction waste management \(bregroup.com\)](http://Wst 01 Construction waste management (bregroup.com))

Activities	Description	Estimated Quantities ¹⁵	Potential significant of effect prior to mitigation
		4. Great Britain or northern Europe; Disposed of at a licenced landfill facility in Ireland.	

Table 19.20 provides a general breakdown of estimated construction waste types based on construction and demolition waste generated in Ireland 2012-2020¹⁶

Table 19.20 Construction Waste Generation Breakdown (Non- Soil and Stone Fraction)

Waste Types	%	Tonnes
Concrete, brick, tile & gypsum	46	37,172
Mixed C&D waste	29	23,435
Metal	14	11,313
Bituminous mixtures	9	7,272
Segregated wood, glass & plastic	2	1,616
	Total	80,808

19.8.1.3 Assessment of Operational Effects

Waste materials will also arise from the operational phase of the 3FM Project. These materials are envisaged as falling under the same three headings as currently exist at the port, namely Ships' Waste, Port Waste, and Cargo Waste, as defined above. Waste from the operational phase of the facilities will originate from a number of distinct sources, namely:

- Ships' Waste generated on-board vessels arriving in Dublin Port including hazardous wastes (waste fuels and hydraulic oils/lubricants, bilge water, filters, WEEE) and non-hazardous wastes (residual waste, food waste, bulk waste). Other vessel wastes include cargo residues, sludge, ballast water, glass, paper, plastic packaging and metal packaging.
- Wastes produced as a result of the activities on site. This will include for example waste cleaning and sanitisation materials, ground maintenance waste, waste chemicals and waste oils.

Potential wastes generated from materials handled at Dublin Port within the 3FM Project area will vary depending on trade requirements but the following is anticipated;

- Lo-Lo containers
- Ro-Ro containers

The 3FM Project will provide greater capacity to cater for the projected growth in port volumes by 2040; therefore it has been assumed that the amount of waste arising will also increase. The 3FM Project does not impact on ferry passenger numbers.

¹⁶ SRWMO Figure 4.11: Breakdown of Non- Soil and Stone Fraction of Construction and Demolition Waste in 2019 (source: EPA)
<https://www.mywaste.ie/wp-content/uploads/2023/05/SRWMO-National-Waste-Management-Plan-for-a-Circular-Economy-Volume-I-Current-Situation-and-Challenges-AW-Onscreen.pdf>

Operational waste from vessels, if not properly managed, could potentially end up in the sea where the potential for contamination or pollution occurs.

Management of waste in the port will be carried in accordance with Dublin Port Waste Reception and Handling Plan 2023. Waste collection is carried out by private waste contractors who then report the data to DPC. Copies of waste receipts will also be sent to DPC who will keep records of all waste landed within Dublin Port. Records will also be maintained by DPC for vessels not under agency and for all non-ship-generated waste, excluding cargo waste. In 2018 90 % of the Port Waste was recovered with the remainder being sent to Landfill. The increased activities associated with the 3FM Project will result in additional waste being generated from freight.

Waste management at the port is currently operated to best practice guidance and in accordance with Dublin Port Waste Reception and Handling Plan 2023. The potential impacts on the environment of improper, or lack of, waste management during the operational phase would be a diversion from the priorities of the waste hierarchy which would lead to significant volumes of waste being sent unnecessarily to landfill. The use of non-permitted waste contractors or unlicensed facilities could give rise to inappropriate management of waste and result in negative environmental impacts of pollution.

In addition, if waste materials are not managed and stored correctly, it is likely to lead to litter or pollution issues within the site, on adjacent lands and in the sea. The knock-on effect of litter issues is the presence of vermin within the development and surrounding areas.

Table 19.21 Operation and maintenance phase impact assessment summary

Activities	Description and quantities	Potential significant of effect prior to mitigation
Potential increase in waste quantities currently produced during routine operation and maintenance of ships due to increased freight capacity. Mainly general waste, non-hazardous	Moderate increase in quantities of general waste which are managed for disposal using methods lower down the waste hierarchy such as landfill and incineration with energy recovery	Moderate

19.8.1.4 Do Nothing Impact

If the proposed 3FM Project did not to go ahead there would be no demolition/excavation, construction or increased operational waste generated at this site. There would be a neutral effect on the environment. The amount of operational waste generated on site may increase marginally when trade volumes increase within the very limited remaining excess capacity available in the port's current configuration.

19.8.2 Assessment of Cumulative Effects

As described in Chapter 5 Project Description, there are a number of developments within the surrounding area which may interact with the 3FM Project. There is potential for a cumulative resource and waste management effect during the demolition/construction phases of the proposed development resulting in effects on the capacity of recovery/disposal waste management facilities in the short term.

The Proposed Development has been considered, taking account of the location, scale and characteristics of those other projects, and assessed as to whether significant cumulative waste management effects are likely to arise. Projects considered relevant to waste, are set out in Table 19.22.

Table 19.22 Projects Considered for Cumulative Effects for Waste

Project	Description
Alexandra Basin Redevelopment (ABR) – ABP Reg. Ref. PL29N.PA0034	DPC was granted planning permission subject to conditions (ABP Reg. Ref. PL29N.PA0034) in July 2015 for the redevelopment of Alexandra Basin, Berths 52 and 53 and dredging of the channel of the River Liffey together with associated works in Dublin Port.
MP2 Reg. Ref. ABP-304888-19	The works proposed in the MP2 Project comprise the following elements: <ul style="list-style-type: none"> • Construction of a new Ro-Ro jetty (Berth 53). • A reorientation of the already consented Berth 52 (ABP Ref. 29N.PA0034). • A lengthening of an existing river berth (50A) to provide the Container Freight Terminal with additional capacity to handle larger container ships. • As part of the infilling of Oil Berth 4, it is proposed to redevelop Oil Berth 3 as a future deep-water container berth (standard depth of -13.0m CD) for the Container Freight Terminal. • The dredging of a berthing pocket to a standard depth of -13.0m CD at Oil Berth 3. • Dredging at the proposed Berth 53 and channel widening to a standard depth of -10.0m CD. • Consolidation of passenger terminal buildings, demolition of redundant structures and buildings, and removal of connecting roads to increase the area of land for the transit storage of Ro-Ro freight units as a Unified Ferry Terminal (UFT).
Open Cycle Gas Turbine (OCGT) and a generating plant. – Reg. Ref. PWSDZ3074/23 – done Q26	ESB Engineering and major projects have proposed the construction of a 299-megawatt electrical output (MWe), Open Cycle Gas Turbine (OCGT) and a generating plant.
Construction of a new 220kV gas insulated switchgear (GIS) Switchboard building – Reg. Ref. 4057/23	EirGrid have proposed planning for the development that will consist of new 220kV gas insulated switchgear building.
Upgrade of the Ringsend Wastewater Treatment Plant (WwTP). Reg. Ref. PL29S.301798	Upgrade of the Ringsend Wastewater Treatment Plant is currently being undertaken. The expansion of the combined heat and power facility at Ringsend Wastewater Treatment Plant. The expansion will maximise energy recovery from the sludge treatment processes to produce bio-gas to fuel the onsite CHP facility which will produce electrical and thermal energy.

Contingent upon the construction phase of the 3FM Project development coinciding with the construction phase of any of the other developments as per Table 19.22 then there is the potential for cumulative impacts to arise.

The construction elements of the ABR Project are to be completed by July 2025 and prior to commencement of the 3FM Project. Further dredging at Alexandra Basin West will be required post July 2025. Dredged material will be brought ashore for treatment (stabilisation/solidification) and recovered as a fill material at the Berth 52/53 basin. An estimated 70,000m³ of Dredge Material from Poolbeg Marina will require recovery/disposal. It is proposed that this material is also treated and recovered as a fill material at the Berth 52/53 basin under a revised IE licence subject to availability of receptor capacity and therefore will not result in cumulative impact.

The construction elements of the other development projects will also be partially completed/completed prior to commencement of the 3FM Project.

It is predicted that the waste arising from the other identified projects listed in Table 19.22 will not result in cumulative impacts when considered with the Proposed Development. Those developments will be required to fully comply with the current legislation, policies, plans and best practice guidance which seek to minimise waste disposal to landfill. There are a high number of waste collectors and facilities registered/licenced in the EMR Region.

There is no potential for a cumulative resource and waste management effect during the operational phase of the proposed development resulting in effects on the capacity of recovery/disposal waste management facilities. As above there are a high number of waste collectors and facilities registered/licenced in the EMR Region.

19.8.3 Inter-relationships

There are several anticipated interactions between waste and other topic EIA chapters, namely: Chapter 4 Noise and Vibration, Chapter 6 Water Quality, Chapter 7 Soils, Geology and Contaminated, Chapter 10 Air Quality, Chapter 13 Land Use & Material Assets.

19.9 Mitigating measures

In order to mitigate against the potential impacts that the 3FM Project could have on the production of waste during each phase, mitigation measures will be put in place to ensure that all waste is dealt with in a sustainable and legislatively compliant manner. These measures are set out below for the various phases of the development.

19.9.1 Demolition Phase Mitigation Measures

Table 19.23 sets out the mitigation measures to be implemented in relation to the demolition phase.

Table 19.23 Demolition and Excavation phase mitigation measures

Demolition Mitigation Measure	Description
Main Works Contractor	A Main Works Contractor (MWC) will be appointed. DPC and its appointed MWC will ensure that demolition wastes will be collected by an appropriately licensed waste management contractor and that all management routes comply with the European Union waste hierarchy of prevention, preparing for reuse, recycling, and recovery with disposal

Demolition Mitigation Measure	Description
	being the last and final option and with other legal requirements. All waste materials leaving the site will be transported and disposed or recovered through licenced operators and in accordance with national waste legislation.
Demolition survey	The Demolition works will be constructed in a phased manor. A Demolition Survey is required prior to any demolition work commencing in order to facilitate and maximise recovery of resources from demolition for beneficial reuse and recycling. The Demolition Survey will set out all high value waste materials, such as metals, that will be removed from buildings and segregated for possible onward reuse or recycling to maximise recovery. As per the best practice guidelines ¹⁷ this will be informed by EU Guidelines for the waste audits before demolition and renovation works of buildings (May 2018). A number of asbestos surveys have been undertaken as summarised in Table 19.15 and are provided in Appendix 19.2. Removal offsite of any ACMs from the buildings to be demolished will be required prior to demolition.
Sorting, segregation & storage of demolition materials	<p>Demolition debris will be sorted and separated into appropriate categories on-site e.g.:</p> <ul style="list-style-type: none"> • Construction debris (i.e. ceramics, tiles, plasterboard) • Masonry materials (i.e. brick, concrete blocks) • Metals • Timber • Universal waste (i.e. fluorescent bulbs, ballast and mercury containing switches) <p>On-site segregation of all hazardous waste materials into appropriate categories:</p> <ul style="list-style-type: none"> • Waste oils and fuels; • Paints, glues, adhesives and other known hazardous substances <p>Wastes will be covered where required and stored in stockpiles, dedicated skips or secure containers for hazardous materials. Signage will be required to ensure waste is sorted into the appropriate categories on-site. Appropriate measures to prevent environmental impacts such as run-off, will be implemented as needed.</p> <p>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 contractor will monitor the amount of waste stored to ensure that the permitted limits of the Exemption are not exceeded. Dublin Port Company and its appointed contractor will consult with the EPA prior to construction to ensure that the appropriate Waste Management Licence or Exemption is in place.</p>
Reuse of demolished/excavation material on site	<p>In order to divert waste from being reuse/recycled off site or landfilled, possibilities for reuse of inert demolition material as fill on site will be considered, following appropriate testing to ensure materials are suitable for their proposed end purpose.</p> <p>If suitable engineered fill material or suitable CDW arising material is identified in the construction phase/sequencing then this material will be</p>

¹⁷ <https://www.epa.ie/publications/circular-economy/resources/CDWasteGuidelines.pdf>

Demolition Mitigation Measure	Description
	<p>used as infill. Suitable CDW arising material will be used in the following construction activities</p> <ul style="list-style-type: none"> • As described in Section 19.7, it is proposed to raise the ground level of the Maritime Village site by an average in excess of 1.5m which will require an estimated 30,200 m³ of imported fill material or suitable engineered fill material/suitable CDW arisings. • Turning Circle 26,500 m³ • Area O 32,250 m³ • Area L 6,900 m³ <p>The existing surfacing, concrete and underlying gravel infill at Area K will be removed or reused if suitable.</p> <p>This will be reviewed on an ongoing basis. DPC and its appointed MWC will consult with the EPA prior to construction to ensure that the appropriate licences, permits and exemptions are in place prior to initiation. For example crushing concrete on site will require a waste facility permit.</p> <p>The existing 100 berth floating marina, and the dedicated rowing pontoons at the Maritime Village site will also be removed together with their anchor block mooring systems and access walkways. Where possible elements will be reused in the proposed new facilities.</p> <p>Under Section 3(1) of the Waste Management Act 1996, as amended the requirements do not apply to the following materials, which hence are not considered 'waste'¹⁸:</p> <ul style="list-style-type: none"> • Land (in-situ) including unexcavated contaminated soil and buildings permanently connected with land – relates to land and buildings prior to any construction or demolition where material remains untouched. Once it has been excavated or otherwise removed, the material may enter into the control regime set down by the Waste Management Acts. • Uncontaminated soil and other naturally occurring material excavated in the course of construction activities where it is certain that the material will be used for the purposes of construction in its natural state on the site from which it was excavated. <p>In addition the following provisions within the European Union (Waste Directive) Regulations 2011–2020 allow for the classification of resources out of the waste regime as follows:</p> <ul style="list-style-type: none"> • Article 27 allows for the notification of a material as a by-product rather than a waste where certain criteria can be demonstrated by the legal person (i.e. further use is certain, no need for further processing, produced as part of a process and further use is lawful). • Article 28 sets out the grounds by which a material, which is recovered or recycled from waste, can be deemed to be no longer a waste and complies with a set of end-of-waste criteria (substance/object to be used for specific purposes, a market or demand exists, fulfils technical requirements and no overall adverse impact to human health or the environment).

¹⁸ Best practice for the preparation of resource & waste management plans for construction & demolition projects EPA 2021

19.9.2 Construction Phase Mitigation Measures

Table 19.24 sets out the mitigation measures to be implemented in relation to the construction phase. A draft Resource & Waste Management Plan (RWMP) has been prepared to accompany the 3FM Project planning application to provide information necessary to ensure that the management of resources and waste at the site from design to construction of a project is in accordance with best practice and relevant legislation (see Construction Environmental Management Plan)

Table 19.24 Construction phase mitigation measures

Construction Mitigation Measure	Description
Duty of care in relation to correct waste authorisations ¹⁹	Contractors working on site during the works will be responsible for the collection, control and disposal of all wastes generated by the works. DPC and its appointed MWC will ensure that waste it is handled only by a body authorised under the Waste Management Act as amended to manage it. 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. DPC and its appointed MWC will ensure that all waste materials leaving the site will be transported via a licensed carrier and disposed or recovered through licenced operators and in accordance with national waste legislation. Monitoring and updating of records will be implemented.
On-site waste management	<p>Project design will incorporate adequate dedicated space for a Waste Storage Area(s) to cater for the segregation and storage of all various waste streams during construction. This waste storage compound will be fully enclosed within the development and will allow for waste sorting, segregation, handling activities such as bailing of cardboard and plastic and sufficient waste storage.</p> <p>Site compounds are indicated in Chapter 5. Separate compounds will be used for different phases of the works. Each compound is located in or immediately adjacent to the relevant works phase, such as to cause minimal interference to general port operations. Wastes will be covered where required and stored in stockpiles, dedicated skips or other suitable receptacles and secure containers for hazardous materials. Signage will be required to ensure waste is sorted into the appropriate categories on-site. Appropriate measures to prevent environmental impacts such as run-off, will be implemented as needed. 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. The Contractor will ensure adequate security measures are put in place</p>
Segregation of materials	<p>Construction waste materials shall be sorted and segregated on-site for recycling into appropriate categories on-site e.g.:</p> <ul style="list-style-type: none"> • Wood/Timber • Metals • Cardboard & paper • Glass • Plastics • Rubble • General waste
Reuse of demolished material on site	In order to divert waste from landfill, possibilities for reuse of inert demolition material as fill on site will be considered, following appropriate testing to ensure materials are suitable for their proposed end purpose.

¹⁹ Section 32 of the Waste Management Act 1996, which requires that waste passes only to an organisation that is authorised to undertake its collection or its recovery or disposal.

Construction Mitigation Measure	Description
	<p>If suitable engineered fill material or suitable CDW arising material is identified in the construction phase/sequencing then this material will be used as infill within the footprint of the development. This will be reviewed on an ongoing basis. DPC and its appointed MWC will consult with the EPA prior to construction to ensure that the appropriate licences, permits and exemptions are in place prior to initiation. :</p> <p>Under Section 3(1) of the Waste Management Act 1996, as amended the requirements do not apply to the following materials, which hence are not considered 'waste'²⁰:</p> <ul style="list-style-type: none"> • Land (in-situ) including unexcavated contaminated soil and buildings permanently connected with land – relates to land and buildings prior to any construction or demolition where material remains untouched. Once it has been excavated or otherwise removed, the material may enter into the control regime set down by the Waste Management Acts. • Uncontaminated soil and other naturally occurring material excavated in the course of construction activities where it is certain that the material will be used for the purposes of construction in its natural state on the site from which it was excavated. <p>In addition the following provisions within the European Union (Waste Directive) Regulations 2011–2020 allow for the classification of resources out of the waste regime as follows:</p> <ul style="list-style-type: none"> • Article 27 allows for the notification of a material as a by-product rather than a waste where certain criteria can be demonstrated by the legal person (i.e. further use is certain, no need for further processing, produced as part of a process and further use is lawful). • Article 28 sets out the grounds by which a material, which is recovered or recycled from waste, can be deemed to be no longer a waste and complies with a set of end-of-waste criteria (substance/ object to be used for specific purposes, a market or demand exists, fulfils technical requirements and no overall adverse impact to human health or the environment).
<p>Construction Environmental Management Plan (CEMP)</p>	<p>Construction waste will be managed as part of the CWMP contained in the CEMP, which will be implemented by the appointed contractor for the duration of the construction works. As demonstrated in the draft 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 draft CEMP appended to the EIAR. Specific waste management requirements include:</p> <ul style="list-style-type: none"> • 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. • On-site segregation of non-hazardous waste materials into appropriate categories, where possible, including any excavated soils, concrete, bricks, tiles, ceramics and plasterboard, metals and timber. • On-site segregation of all hazardous waste materials into appropriate categories including contaminated soils, waste oil and fuels and paints, glues, adhesives and other known hazardous substances.

²⁰ Best practice for the preparation of resource & waste management plans for construction & demolition projects EPA 2021

Construction Mitigation Measure	Description
	<ul style="list-style-type: none"> • 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. • Segregation of waste at source where practical. • 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. • Provide a method to calculate the difference between expected waste quantities prior to commencement of the project and actual waste quantities after the project is complete. • The appointed contractors for the site preparation, piling, earthworks and construction phases of the works will be contractually obliged to follow the CEMP and all relevant legislation.
Project Resource & Waste Management Plan (RWMP)	<p>A Project RWMP will be prepared in accordance with 'BEST PRACTICE GUIDELINES for the preparation of resource & waste management plans for construction & demolition projects.' A preliminary draft plan has been incorporated into the CEMP to ensure effective waste management and recycling of waste generated during the works.</p> <p>The Plan 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, 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 Project RWMP and all relevant legislation.</p>
Waste Arising from Wash Down Facility	<p>Solid waste in the form of sediments will arise from the wheel wash unit settlement tank. The unit will be inspected daily (for example, to check automated features are working and settlement content) and emptied in accordance with manufacturer's instructions. The solid residues will be analysed and the disposal route appropriately selected based on the results of this analysis. A gully emptier tanker will be used to remove settlement tank waste which will be disposed of at an approved waste disposal site.</p>
Fuels and hydraulic oils/lubricants	<p>Contractors will ensure all plant is inspected and serviced in accordance with its schedule. A bunded disposal area will be provided. Contractors will provide staff training on the waste management strategy. Disposal/recovery under licence.</p>

19.9.3 Operation and Maintenance Phase Mitigation Measures

Table 19.25 sets out the mitigation measures/plans/EMS for the for the management of wastes arising at Dublin Port to be implemented prior to the operational phase. These will be reviewed on an ongoing basis as part of DPC's environmental management system.

Table 19.25 Operation and maintenance phase mitigation measures

Operational Mitigation Measure	Description
Dublin Port Waste Reception and Handling Plan	<p>The current Dublin Port Waste Reception and Handling Plan 2023 underpins all waste related operations at Dublin Port. <i>“The purpose of this plan is to ensure that the needs of potential users and waste regulators are taken into account when planning and operating port waste reception facilities; to ensure that all mariners are aware of the requirement to transfer ashore their ship waste at every port they visit the location, cost and procedures for using the facilities and in Dublin Port. Also, it is a means of informing the ships masters and their agents/terminal operators regarding the legislative requirements and the consultation arrangements by the port for the future development of adequate facilities within the port.”</i></p> <p>Ship waste is classified as the waste delivered by ships calling at ports²¹.</p> <p>The purpose of the Plan is to ensure that:</p> <ul style="list-style-type: none"> • The needs of potential users and waste regulators are considered when planning and operating port waste reception facilities; • To ensure that all mariners are aware of the requirement to transfer ashore their ship waste at every port they visit; • Outline the location of the costs and procedures for using the waste reception facilities in Dublin Port; • There is a means of informing the ships masters and their agents/terminal operators regarding the legislative requirements; • Outline the Port’s consultation arrangements for the future development of adequate facilities within the Port. <p>Port waste concerns the waste generated by port-based activities. DPC is responsible for the management of a wide range of wastes arising at Dublin Port. Waste from DPC operational activities is collected and managed by a licensed waste contractor. Paper, cardboard, plastic bottles, aluminium cans and compostable are separated from mixed municipal waste (MMW) and recycled. Timber, metal and waste electrical and electronic equipment (WEEE) are also separated for recycling.</p>
On-site waste management	<p>The 3FM Project design incorporates adequate dedicated space to cater for the segregation and storage of all various waste streams within the terminal building. This bin storage area will allow for waste segregation, handling activities such as bailing of cardboard and plastic and sufficient waste storage. All staff will be provided with training regarding the waste management procedures. Waste from operational activities will be collected and managed by a licensed waste contractor.</p>
Environmental Management System (EMS)	<p>DPC will continue to implement its Environmental Policy and update its Environmental Management System for the development consistent with best practice. DPC is committed to achieving high standards of environmental management. This is reflected in the company’s commitment to its ESPO’s EcoPorts Ports Environmental Review System (PERS).</p> <p>It is DPC Environmental Policy to set clear environmental objectives and targets and to regularly to monitor progress against them. The following has been set in relation to waste management²¹.</p> <p>Objective : Increase DPC’s Waste Management Performance</p> <p>Target : Maintain DPC’s waste recycling rate with a constant aim of 100% recycling</p> <p>Ensure all waste arisings from capital projects monitored and annual statistics are submitted</p> <p>Due date 2023</p>

²¹ Dublin Port Company Environmental Report 2023

19.10 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 a Resource Manager (RM) throughout the construction stage of the proposed development. The RM 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 sorting, segregation and storage of recyclable materials, have information on the materials that can be reused on-site and implement the Project C&D Waste Management

Training of staff on site will be coordinated by the RM 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 RWMP and to detail the sorting and 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 sorted and segregated, the storage methods and the location of waste storage areas. A subsection on hazardous wastes will be incorporated 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 RM will have responsibility to maintain and record the following:

- List of up to date authorised waste collection permit NWCPO numbers and destination facilities permit/waste licence/PPC numbers being used
- Provide when required letter on headed paper signed by relevant competent person from the destination facilities confirming acceptance of the material and tonnages agree specifically referencing the site
- Waste Classification undertaken were required (Laboratory testing and Haz Waste Online results)
- 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 RM 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. The RM will ensure that the waste docket used are specific to the authorised waste collector that collected the waste. 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 RM 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 development.

19.11 Summary of Effects & Conclusion

19.11.1 Demolition Phase

A carefully planned approach to waste management and adherence to the CEMP and RWMP during demolition phase will ensure that any waste produced during this phase will be recycled or recovered where possible. Minimal amounts of waste will need to be disposed of in landfill.

Section 19.6.3 notes the current Soil Recovery Facility, Inert and Municipal Waste Landfills capacity available in Ireland, however as noted in the National Waste Management Plan for a Circular Economy plan the current capacity to treat non-hazardous soil and stone within the State is limited and this waste stream cannot compete with municipal waste for treatment capacity and the Plan needs to support additional treatment capacity. New capacity or infrastructure will need to be put in place to meet forecast demand.

In addition, a number of measures have been introduced nationally to prevent materials from becoming waste from construction and demolition with the following applicable to waste arisings from 3FM Project.

- National By-Product criteria²² for Road Planings as asphalt pavement material, in both milled and slab form, accepted at Reclaimed Asphalt Pavement plants.
- Two end-of-waste operators (Integrated Materials Solution and Starrus Eco Holdings Limited, Panda) have been consented to recycle aggregates into product ((Decision on Article 28 (Aggregate))²³

As previously noted, further ground investigations will be required to inform the detailed design. Any non-hazardous or hazardous soils arising from excavation from the 3FM Project based on Waste Classification and WAC testing that are not suitable for recovery/disposal at facilities in Ireland may need to be exported abroad for final treatment.

Suitable CDW arising material will also be used in the following construction activities as described in Section 19.7

²² <https://www.epa.ie/publications/licensing--permitting/waste/consultation-paper--regulation-277-national-by-product-criteria-for-greenfield-soil--stone-used-in-developments.php>

²³ <https://www.epa.ie/publications/licensing--permitting/waste/consultation-paper-regulation-277-national-by-product-criteria-for-road-planings-used-in-rap-plants.php>

- Raising the ground level of the Maritime Village site by an average in excess of 1.5m which will require an estimated 30,200 m³ of imported fill material or suitable engineered fill material/suitable CDW arisings.
- Turning Circle 26,500 m³
- Area O 32,250 m³
- Area L 6,900 m³

The existing surfacing, concrete and underlying gravel infill at Area K will be removed or reused if suitable.

Therefore the waste effects on the environmental and on landfill void space capacity are deemed to be **Moderate** with residual effect outcome being not significant (see Table 19.26) Minimal amounts of waste will need to be disposed of in landfill due to the mitigation measures being put in place.

19.11.2 Construction Phase

A carefully planned approach to waste management and adherence to the CEMP and RWMP during construction phase will ensure that waste is minimised, and any waste produced during this phase will be recycled or recovered where possible. Minimal amounts of waste will need to be disposed of in landfill.

Therefore the effect of the construction phase in relation to waste management is deemed as **neutral or slight** with residual effect outcome being not significant.

19.11.3 Operational Phase

While there may be a minor increase in waste due to anticipated increased freight, there will be no discernible effects to waste management once operational due to recycling and reuse policies, procedures and the implementation of the Waste Reception and Handling Plan. There is recycling capacity within the existing waste management infrastructure to manage waste arising from the operational phase of the development works. Minimal amounts of waste will need to be disposed of in landfill. Therefore the effect of the operational phase in relation to waste management is deemed as **neutral or slight** with residual effect outcome being not significant.

19.11.4 Conclusion

Summary of Likely Environmental Impacts on Waste for demolition, construction and operation phases are giving in Table 19.26.

Table 19.26 Summary of Likely Environmental Impacts on Waste

Receptor	Sensitivity of receptor	Assessment of Magnitude	Predicted Effect	Adverse/Beneficial	Permanent/Temporary	Mitigation Measures	Significant Not significant
Demolition Phase							
Non – Hazardous and Inert Landfill Void Space Capacity	Medium	Moderate	Moderate	Adverse	Temporary	See section 19.9.1	Not Significant
Construction Phase							
Non – Hazardous and Inert Landfill Void Space Capacity	Medium	Negligible	Neutral or Slight	Adverse	Temporary	See section 19.9.2	Not significant
Operational Phase							
Non – Hazardous and Inert Landfill Void Space Capacity	Medium	Negligible	Neutral or Slight	Adverse	Permanent	See section 19.9.3	Not significant

19.12 Limitations of the Assessment

There are no known limitations to the assessment presented in the EIAR. Until pre demolition surveys and final design has been undertaken estimates of waste generated have been used in the assessment presented in this EIAR. Waste quantities from the excavation/demolition phase and construction phase will be subject to change throughout the proposed project.