FEHILY TIMONEY

CONSULTANTS IN ENGINEERING, ENVIRONMENTAL SCIENCE & PLANNING

ENVIRONMENTAL IMPACT ASSESSMENT REPORT FOR THE EXPANSION OF A MATERIALS RECOVERY FACILITY AT CAPPOGUE AND DUNSINK, BALLYCOOLIN ROAD, DUBLIN 11.

VOLUME 1 – NON-TECHNICAL SUMMARY

Prepared for: Padraig Thornton Waste Disposal Ltd. T/A Thorntons Recycling

Thorntons recycling

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1. INTRODUCTION

1.1 Introduction

Padraig Thornton Waste Disposal Ltd. T/A Thorntons Recycling intends to apply for planning permission to expand an existing Materials Recovery Facility (MRF). The existing MRF is situated at Unit 1, Cappogue Industrial Park, Ballycoolin Road, Cappogue, Dublin 11. The proposed development will involve the construction and operation of an expanded Materials Recovery Facility at a development site (3.38 ha in size) which falls across the townlands of Cappogue and Dunsink, south of the Ballycoolin Road, Dublin 11.

The planning application for the proposed development is therefore being made directly to An Bord Pleanála under Section 37E of the Act.

Fehily Timoney & Company (FT) has prepared this Environmental Impact Assessment Report (EIAR) on behalf of the Applicant to accompany the application for planning permission made to An Bord Pleanála for the proposed development.

This volume of the Environmental Impact Assessment Report (EIAR) provides a Non-technical Summary (NTS) of the following chapters contained in the main body of this EIAR (Volume 2).

1. Introduction
2. Need for the Proposed Development
3. Alternatives
4. Existing and Proposed Development
5. Planning and Policy
6. Scoping and Consultation
7. Population and Human Health
8. Biodiversity
9. Soils, Geology and Hydrogeology
10. Hydrology and Surface Water Quality
11. Air Quality and Climate
12. Noise and Vibration
13. Traffic and Transportation
14. Cultural Heritage
15. Landscape and Visual Impacts
16. Inter-relationships and Interactions.

In certain instances, where appropriate, this NTS uses simpler and clearer language when summarizing the chapters contained in Volume 2 of the EIAR. This to aid the non-technical readers understanding of the content presented and discussed.

1.2 The Applicant

The Applicant for the proposed development is Padraig Thornton Waste Disposal Ltd. T/A Thorntons Recycling.

Thorntons Recycling is a family-owned business established in 1979. The company operates waste management facilities in Counties Dublin, Meath, Wicklow and Kildare serving over 5,500 commercial customers and 75,000 household customers each day. The company employs over 560 no. staff. Thorntons head office is in the Parkwest Business Park, Dublin 12. The company's customer base includes household, commercial and industrial (C&I) and construction and demolition (C&D) sectors.

1.3 The Site

The proposed development site is 3.38 ha in size. The development site encompasses the Applicant's existing waste facility site (0.75 ha in size) together with lands to the south of this facility situated in the townlands of Cappogue and Dunsink, Dublin 11 (2.63 ha in size).

The development site is situated approximately 2 km north-west of Finglas village and 2 km east of Blanchardstown village. The site is located south of the Ballycoolin Road and immediately north of the M50, approximately midway between Junctions 5 and 6.

Dunsink Landfill and agricultural lands are situated further south of the site on the opposite side of the M50.

There are 4 no. residential dwellings adjacent to the site on Barn Lodge Grove beyond the western boundary, known as Coolbrook Cottages. Further to the south-west of the site on Barn Lodge Grove there is a cluster of residential properties, some of which border the site's south-western boundary. Agricultural lands are situated further west of the site. Ballycoolin Road is situated ca. 180 metres north of the site. A number of residential dwellings are situated along this road ca. 200 m north-west of the site.

Stadium Business Park is situated ca. 240 metres north of the site. Premier Business Park is situated ca. 270 metres to the north-east of the site.

The National Orthopaedic Hospital Cappagh is located ca. 755m to the south-east of the site on the opposite side of the M50.

Various industrial land uses are located to the north-east of the site along the Cappagh Road including a MRF, operated by Starrus Eco Holdings Limited t/a Panda; Huntstown Quarry, which is operated by Roadstone; and a concrete batching plant operated by Kilsaran Concrete.

1.4 Regulatory Control of the Proposed Development

Waste management activities associated with the proposed development (i.e., the expanded waste facility) will be regulated under an Industrial Emissions (IE) Licence granted by the Environmental Protection Agency (EPA).

This authorisation will allow for the continued regulation and control of the proposed waste activities to be undertaken on-site.

The following aspects of the proposed development will be controlled through this authorisation:

- Emissions to air and surface water.
- Monitoring requirements for emissions.
- Resource use and energy efficiency.
- Waste management control documentation.
- Waste acceptance and records.
- Storage and transfer of substances.
- Changes to operations and the physical fabric of the facility.
- Facility management including the requirement for an environmental management system (EMS).
- Infrastructure management.
- Accident prevention and emergency response including fire water retention; and,
- Operational controls.

A Section 50 Consent from the Office of Public Works is required for the culverting of an existing surface water drain traversing the site.

The Applicant intends on applying for each of the consents listed above in the event of grant of planning permission for the proposed development.

1.5 EIAR Process

The purpose of this EIAR is to provide a detailed description of the proposed development and outline potential impacts associated with the construction and operation of the development. Where adverse impacts have been identified, mitigation measures are proposed to reduce or eliminate the potential effects. This document provides a non-technical summary of the EIAR including a description on the receiving environment, details on the proposed development and potential impacts, mitigation measures and residual impacts.

In addition to the EIAR, an Appropriate Assessment Screening Report has been prepared for the proposed development, as required by Article 6 of the Habitats Directive.

The Competent Authority, in this case An Bord Pleanála, prior to making a decision to grant development consent must conduct their own EIA on the basis of this EIAR in making their decision on whether permission for the development will be granted.

1.6 Environmental Impact Assessment Report

1.6.1 Requirement for the Competent Authority to Conduct EIA

The requirement for EIA of certain types of proposed development is transposed into Irish legislation under the Planning and Development Act, as amended, and the Planning and Development Regulations 2001 to 2022, as amended (the "2001 Regulations"). Part 1 of Schedule 5 to the 2001 Regulations, as amended includes a list of projects which are subject to mandatory EIA based on, inter alia, their scale, nature, location and context.

Part 2 of the same Schedule 5 includes a list of projects where, if specified thresholds are exceeded, or where it is determined that there is potential for significant environmental impact, an EIA is also required. "*Installations for the disposal of waste with an annual intake greater than 25,000 tonnes*" fall into Part 2 of Schedule 5 and therefore, pursuant to section 176 of the 2000 Act and article 94 of the 2001 Regulations, an EIA of the proposed development is required to be carried out by the Competent Authority prior to making a decision to grant development consent.

1.6.2 EIAR Methodology

The Environmental Impact Assessment Report (EIAR) is a report of the effects, if any, which a proposed development, if carried out, would have on the environment. The EIAR provides the competent authorities and the public with a comprehensive understanding of the project, the existing environment, the impacts and the mitigation measures proposed.

The Competent Authority is obliged to carry out an Environmental Impact Assessment (EIA). The obligations imposed on the Competent Authority by the EIA Directive are set out in Part X of the Planning Acts.

Article 3 of the 2014 EIA Directive states that an *"environmental impact assessment shall identify, describe and assess in an appropriate manner, in the light of each individual case, the direct and indirect significant effects of a project on the following factors:*

(a) population and human health;

(b) biodiversity, with particular attention to species and habitats protected under Directive 92/43/EEC and Directive 2009/147/EC;

(c) land, soil, water, air and climate;

(d) material assets, cultural heritage and the landscape;

(e) the interaction between the factors referred to in points (a) to (d)".

An EIAR presents relevant information such that an Environmental Impact Assessment (EIA) can be undertaken to assess the potential effects of certain development projects on the environment. The EIA process is undertaken by the relevant regulatory authorities.

The primary objective of an EIA is to ensure that projects which are likely to have significant effects on the environment are assessed and impacts avoided, where possible. This assessment process aims to achieve the most sustainable and environmentally friendly integration of a development with the local environment.

Firstly, the planning and policy context, the background to the project including the need for the development, consultation, the alternatives assessed, and the existing and proposed development is described.

This sets the reader in context as to the practical and dynamic process undertaken, to arrive at the layout and design of the proposed development that will cause least impact on the environment.

Subsequent sections deal with specific environmental topics, for example, human health and population, air and climate, hydrology and surface water, noise, etc. These sections may involve specialist studies and evaluations. The methodology applied during these specific environmental assessments is a systematic analysis of the proposed development in relation to the existing environment.

The broad methodology framework for these assessments is outlined below and is designed to be clear and concise and allow the reader to logically follow the assessment process through each environmental topic. In some instances, more specific topic related methodologies are outlined in the relevant sections of the EIAR.

The broad methodology framework used in all sections includes:

- Introduction;
- Assessment Methodology;
- Receiving Environment;
- Summary of Key Possible Impacts;
- Mitigation Measures;
- Predicted Impacts after Mitigation;
- Monitoring;
- Conclusion and Summary.

The EIAR has been prepared in accordance with guidelines listed hereunder except where specific sectoral guidance was used e.g. traffic:

- EPA (2022), Guidelines on the Information to be contained in Environmental Impact Assessment Reports.
- Department of Housing, Planning and Local Government (2018), Guidelines for Planning Authorities and An Bord Pleanála on Carrying out Environmental Impact Assessment.
- European Commission (EC) (2017), Environmental Impact Assessment of Projects - Guidance on the preparation of the Environmental Impact Assessment Report (Directive 2011/92/EU as amended by 2014/52/EU).

1.6.3 EIAR Structure

The EIAR has been structured in accordance with the European Commission's Guidance Environmental Impact Assessment of Projects - Guidance on the preparation of the Environmental Impact Assessment Report (Directive 2011/92/EU as amended by 2014/52/EU).

The EIAR comprises four volumes:

Volume 1: Non-Technical Summary
Volume 2: Main Report
Volume 3: Appendices
Volume 4: Drawings

The following topics and related chapters are presented in this EIAR:

1. **Introduction**
2. **Need for the Proposed Development**
3. **Alternatives**
4. **Existing and Proposed Development**
5. **Planning and Policy Context**
6. **Scoping and Consultation**
7. **Population and Human health**
8. **Biodiversity**
9. **Soils, Geology and Hydrogeology**
10. **Hydrology and Surface Water**
11. **Air and Climate**
12. **Noise and Vibration**
13. **Traffic and Transportation**
14. **Archaeological, Architectural and Cultural Heritage**
15. **Landscape and Visual Impact**
16. **Inter-relationships and Interactions**
17. **Schedule of Commitments**

1.7 Cumulative Impacts

Cumulative assessment is an assessment of the changes to the environment that are caused by activities/projects in combination with other activities/projects. The potential significant effects of the proposed project are assessed in conjunction with other existing or proposed development located nearby or in the vicinity of the development in question. The potential combined environmental impacts can be accurately assessed in the event of the proposed development proceeding.

The requirement for cumulative assessment derives from the EIA Directive, as amended, where Annex IV requires that the EIAR should describe:

"*the likely significant effects of the project on the environment resulting from… the cumulation of effects with other existing and/or approved projects taking into account any existing environmental problems relating to areas of particular environmental importance likely to be affected or the use of natural resources".*

In the context of an EIAR, cumulative effects can be applied to two different aspects of a development.

Firstly, the various impacts of a particular project can interact in a manner which causes additional effects, which when taken together are greater than they appear when documented under separate topic headings.

Secondly, a project may magnify effects already associated with other built development.

In terms of assessing the potential for cumulative effects in this EIAR, a review of other projects and existing development within Cappogue and Dunsink townlands and the wider area surrounding the development site was carried out. Projects and existing development that have the potential to have a cumulative impact in-combination with the proposed development have been identified and are listed in Appendix 1.2, Projects considering during Cumulative Assessment, in Volume 3 of this EIAR.

1.8 Appropriate Assessment

In compliance with the provisions of Article 6 of the Habitats Directive, as implemented by Part XAB of the Planning and Development Act 2000, as amended, in circumstances where a proposed plan or project is likely to have a significant effect on a European (or Natura 2000) site, either individually or in combination with other plans or projects, an Appropriate Assessment (AA) must be undertaken by the Competent Authority of the implications for the site in view of the site's conservation objectives.

European sites comprise both Special Protection Areas (SPAs) for birds and candidate Special Areas of Conservation (cSACs) for habitats and species. The Habitats Directive (Council Directive 92/43/EEC) formed a basis for the designation of SACs while SPAs are designated under the Birds Directive (Council Directive 79/409/EEC on the Conservation of Wild Birds, now Directive 2009/147/EC).

Article 6 of the Habitats Directive envisages a two-stage process, which is implemented in some detail by the provisions of sections 177U and 177V of the Planning and Development Act 2000, as amended.

A screening for appropriate assessment of an application for consent for proposed development shall be carried out by the competent authority to assess, in view of best scientific knowledge, if the proposed development, individually or in combination with another plan or project is likely to have a significant effect on the European site.

Plans or projects that can have no significant adverse effect on a European site are excluded, or screened out, at this stage of the process. Where screening concludes that the possibility of significant effects on a European site cannot be excluded, then it is necessary for the competent authority to carry out an Appropriate Assessment (AA) (Stage Two) for the purposes of Article 6(3). A report called a Natura Impact Statement (NIS) is produced for the purposes of the Stage Two AA. The NIS considers the potential impact of a project or plan on the integrity of a European site and on its conservation objectives.

In carrying out an Appropriate Assessment, the Competent Authority (in this case An Bord Pleanála) is required to make an examination, analysis, and evaluation, make findings, and reach conclusions and a final determination as to whether the proposed project would adversely affect the integrity of any relevant European site in view of its conservation objectives.

An Appropriate Assessment Screening Report has been completed for the subject proposed development and accompanies this planning application. This report 'screened out' the need for the carrying out a full Appropriate Assessment, otherwise referred to as a Natura Impact Statement.

1.9 Difficulties Encountered

There were no technical difficulties encountered during the preparation of this EIAR.

1.10 Viewing of the EIAR

Copies of this EIAR including the Non-Technical Summary, the Appendices and EIAR Drawings may be inspected free of charge or purchased by any member of the public during normal office hours at An Bord Pleanála, 64 Marlborough St, Rotunda, Dublin 1, D01 V902.

2. NEED FOR THE PROPOSED DEVELOPMENT

This chapter assesses the need for the proposed development in the context of the existing and future waste management capacity requirements.

The proposed development relates to increasing the regional and national capacity for the following:

- Residual Municipal Solid Waste (rMSW) sorting and pre-treatment to facilitate organic material treatment, metal recycling and energy recovery.
- Construction and Demolition (C&D) waste sorting and processing to enhance recycling.
- The acceptance and bulking of food waste, and its onward transfer to biological treatment facilities (I.e., composting facilities).
- The acceptance and bulking of Mixed Dry Recyclables (MDR), and its onward transfer to recycling facilities.

The proposed development will facilitate the Applicant in augmenting its owns waste treatment capacity and in achieving its commercial objectives, namely by allowing the Applicant to accept and manage the wastes that it collects at waste management facilities under its control in a manner that is self-sufficient, efficient, and cost effective.

The proposed development will improve waste management capacity regionally and nationally in accordance with the tenets of self-sufficiency and proximity as defined in waste management legislation and policy.

The proposed development will contribute to meeting waste management needs defined by waste management policy and legislation.

The proposed development will contribute toward meeting municipal waste and C&D waste management capacity needs.

It is predicted that 4.5 m tonnes of municipal waste will be generated in 2035. The Waste Framework Directive sets a municipal waste recycling target of 65% for 2035. Assuming this target is achieved, it can be expected that approximately 2.9 m tonnes of municipal waste generated in 2035 will be subject to recycling through material recycling or composting/anaerobic digestion, and 1.6 m tonnes of municipal waste (rMSW) generated in 2035 will be subject to final treatment through energy recovery or landfilling. The proposed development will provide capacity for the future management of municipal waste including rMSW, food waste and MDR, and will enhance recycling rates in each of these wastes streams given the nature of processing and high degree of waste segregation that will occur at the facility.

The published report, prepared on behalf of the three waste management regions, entitled 'Construction & Demolition Waste – Soil and Stone Recovery/Disposal Capacity' identifies a potential shortfall in capacity for C&D soil and stone in the range of c. 1.5 million tonnes in 2018 to just under 4 million tonnes in 2023. The proposed development will provide capacity for the future segregation and recycling of C&D waste.

The proposed development will support achieving Waste Management targets defined nationally under the Waste Framework Directive and Landfill Directive, including targets to increase rMSW recycling and reduce landfilling of waste. Under the revised Waste Framework Directive recycling targets for municipal waste will increase to 55% in 2025, 60% in 2030 and 65% in 2035.

With a 37% recycling rate reported for 2019 by the EPA significant change is needed to meet these targets including greater capacity for separation and recovery of recyclable materials. The revised Landfill Directive includes a target to reduce the landfilling of municipal waste to 10% or less by 2035. The EPA have reported that 15% of municipal waste was landfilled in 2019. The operation of the proposed facility will serve to promote material separation and recovery/recycling, the diversion of waste from landfill, and the pre-treatment of rMSW waste / recycling of rMSW waste fractions (e.g., metal waste and organic waste). The facility will therefore contribute to the achievement of the targets defined in the Waste Framework Directive and Landfill Directive

The EPA requires that all rMSW sent for energy recovery is pre-treated I.e., to ensure all recoverable/recyclable content of the waste is extracted prior to energy recovery. The proposed development will contribute to meeting rMSW pre-treatment capacity need on a regional and national scale.

The proposed development will support and underpin the enhancement of Ireland's final treatment and recycling capacity. Waste processing operations at the proposed development will ensure a very high degree of waste segregation. A facility of this nature will contribute to making the development of additional final treatment infrastructure (such as recycling facilities) more economically viable.

3. ALTERNATIVES

The assessment of alternatives an important part of the environmental impact assessment process and is a legal requirement for the preparation of EIAR. It can assist in minimising the project's significant effects on the environment by identifying whether there are reasonable alternative approaches to achieving the project's objectives. In line with the 2014 EIA Directive (Directive 2014/52/EU) the assessment of alternatives in this EIAR provides:

> "*a description of the reasonable alternatives studied by the developer, which are relevant to the project and its specific characteristics, and an indication of the main reasons for the option chosen, taking into account the effects of the project on the environment. [Article 5(1)].*

The following project alternatives were considered in the EIAR:

- The 'Do Nothing' Alternative;
- Alternative Project Locations – where the option of constructing the proposed waste facility at a different site was considered;
- Alternative Designs – where alternative site layout and designs were considered;
- Alternative Processes – this alternative considers alterative waste processing activities at the proposed development.

3.1 'Do Nothing' Alternative

The project alternative of a 'Do Nothing' scenario is an important part of the assessment of alternatives in EIA.

The 'Do Nothing' scenario involves the Applicant not progressing the proposed development. The development site will remain as it is in this scenario. The existing waste facility will continue to operate in accordance with the conditions of the planning consents and Waste Facility Permit. Lands to the south of the existing waste facility will remain as they are.

The 'Do Nothing' scenario, the potential residual environmental impacts of the proposed development as set out throughout this EIAR will not occur.

The following project benefits will not be accrued in a 'Do Nothing' scenario:

- Benefits associated with improving waste recovery/recycling capacity in the region and nationally;
- Benefits associated with promoting and supporting circular economy policy objectives;
- Socio-economic benefits associated with the proposed development (i.e., job creation, benefits to local business).

3.2 Alternative Project Locations

The Applicant considered several potential site locations for the proposed development prior to selecting the proposed site.

The following sites were considered for the proposed development initially:

- Kilmainhamwood Composting Facility, Ballynalurgan, Co. Meath;
- Killeen Road Materials Recovery Facility (MRF), Ballyfermot, Dublin 10;
- Parkwest Dry Mixed Recyclables (DMR) Facility, Park West Business Park, Dublin 12;
- Dunboyne MRF, Dunboyne, Co. Meath
- Cappogue C&D MRF, including lands to the south of the site, Cappogue and Dunsink, Dublin 11.

Following an extensive site selection process, the Applicant determined that the subject development site is preferable due to its ideal location close to centres of waste generation and a number of motorways and national roads, the lack of capacity at the other sites to accommodate additional waste management development, and a lack of significant environmental and planning constraints. The development site was ultimately selected on the basis of economic criteria, business criteria and environmental criteria.

3.3 Alternative Designs

As part of the preliminary design process for the proposed development, three different facility configurations and concept layouts were identified by the designers for consideration by the Applicant.

The preferred concept layout was identified having regard to the following factors:

1. Access to the site;
2. Proximity to site services;
3. Interference with site services / need to relocate site services;
4. Interaction with existing drainage features (E.g. soakaway and drainage ditch traversing the site);
5. Conflict with Wayleaves present at the site;
6. Processing building footprint, siting within the site and orientation;
7. Environmental impact mitigation.

The site layout was further developed via a reiterative design process between the Applicant and the project engineers. Ultimately, the chosen proposed layout was deemed to be the most suitable layout having regard to operational criteria (e.g., process flows, staff requirements) and environmental criteria (e.g. installation of solar panels to reduce facility reliance on fossil fuel derived energy).

3.4 Alternative Processes

Facility processing operations were designed and evolved in a manner that ensures the facility is capable of accepting and processing the variety of waste types collected by the Applicant in the surrounding regions. The array and type of processes that are proposed for the facility on-site will facilitate the effective management of waste in line with relevant public policy on the circular economy.

The Applicant initially intended on accepting rMSW, C&D waste and food waste only at the proposed development. The Applicant subsequently decided to accept MDR at the facility also, following a review of its waste collection operations and considering future waste generation predictions and the need for additional recycling.

The Applicant considered processing accepted rMSW to produce Solid Recovered Fuel (SRF) but decided to limit rMSW processing to trommel screening and extraction of metals via an inline magnet and eddy current for commercial reasons, and due to changing requirements at destination energy recovery facilities.

The Applicant considered carrying out composting and/or anaerobic digestion at the proposed development, however, ultimately, decided not to give the existing level of food waste treatment capacity under their control at the Kilmainhamwood facility.

No other alternative processes were considered for the proposed development.

3.5 Conclusions on the Alternatives Assessment

Overall, it is concluded the proposed development, as designed, maximises benefits to the Applicant, the local area, wider region, and society generally compared to the alternatives considered. Conversely, it is concluded that the proposed development achieves the minimum possible environmental impact on surrounding environmental receptors compared with the alternatives considered and the option of developing a new waste facility at a greenfield site.

4. EXISTING AND PROPOSED DEVELOPMENT

4.1 Existing Development

The Applicant operates an existing Construction and Demolition (C&D) Materials Recovery Facility at the northern section of the proposed development site. The facility is authorised to accept and process 49,500 tonnes of waste per annum comprising mixed C&D waste, bulky skip waste and wood waste.

The existing waste facility site infrastructure consists of:

- Site access.
- Site security.
- Waste reception and processing building.
- External lighting.
- Weighbridge.
- Parking.
- Site services.
- Drainage.
- Rainwater harvesting tank.
- Concrete hardstanding.

The existing facility is accessed via a single carriage access road within Cappogue Industrial Park from the Ballycoolin Road. The entrance gate is located on the eastern boundary of the facility.

There is one building at the facility. It is 90m long, 24 m wide and 12.4 m high. The total footprint of the building is 2,108 m^2. The building is subdivided internally into different activity areas comprising:

- C&D reception and processing area:
    - Main recovery area.
    - Storage area and fines screening area.
    - Non-ferrous metal processing area.
- Maintenance shed.
- Administration areas including offices and welfare facilities (ground floor and first floor).

Lands to the south of the existing facility which are within the confines of the proposed development site consist of grassland / scrubland areas. These lands were used historically for agricultural purposes but are now in a state of disuse. A dense area of scrubland and a surface water drainage ditch traverse these lands in a north-west to south-east direction. This ditch exits the site via an existing surface water outfall to the south-east of the site. This outfall is culverted beneath the M50.

An existing overhead powerline which supplies power to the existing facility and a pumping station to the south-east of the development site traverses these lands to the south of the existing facility. An ESB Pylon is situated to the south-west of the site. An ESB wayleave and a gas wayleave also traverse these lands.

4.2 Proposed Development

4.2.1 Overview of the Proposed Development

Padraig Thornton Waste Disposal Ltd. T/A Thorntons Recycling intends to apply for planning permission to expand an existing Materials Recovery Facility (MRF). The existing MRF is situated at Unit 1, Cappogue Industrial Park, Ballycoolin Road, Cappogue, Dublin 11. The proposed development will involve the construction and operation of an expanded Materials Recovery Facility at a development site (3.38 ha in size) which falls across the townlands of Cappogue and Dunsink, south of the Ballycoolin Road, Dublin 11.

The proposed expanded facility will accept and process up to 300,000 tonnes per annum (tpa) of waste material, to include:

- 100,000 tpa of residual municipal solid waste (rMSW).
- 50,000 tpa food waste.
- 100,000 tpa construction and demolition (C&D) Waste.
- 50,000 tpa mixed dry recyclable (MDR) waste.

The proposed development will consist of the following:

1. Demolition of one annex of the existing building on-site (226 m^2, 9.46 m in height) and the removal of an existing weighbridge.
2. Clearance of lands to the south of the existing waste facility.
3. Culverting of an existing surface water drain traversing the site.
4. Development of a new second entrance ca. 35 m south of the existing site entrance to accommodate vehicles accessing and egressing the proposed facility.
5. Upgrade and expansion of the existing building on-site, to be referred to MRF 1 (2,659 m^2, to a maximum height of 12.48 m).
6. Development of a new building on-site, to be referred to as MRF 2 (1,735 m^2, to a maximum height of 13.65 m).
7. Development of a new building on-site, to be referred to as MRF 3 (4,320 m^2, to a maximum height of 13.85 m).
8. Development of ancillary infrastructure including:
    a. advertising signage (8 m x 2 m) on the southern and western façades of the MRF 3 building and on the southern façade of the southern façade of the MRF 1 building,
    b. internal site roads, parking and skip storage,
    c. an administration building (272 m^2, to a maximum height of 6.96 m),
    d. 2 no. at-grade weighbridges and a weighbridge office (18.5 m^2, 3.3 m in height),

e. an electrical sub-station (23 m^2, 2.98 m in height),
f. a vehicle workshop (519 m^2, to a maximum height of 8.44 m),
g. a vehicle refuelling facility adjoining the vehicle workshop, with an internal 45 m^3 bunded diesel storage tank,
h. a vehicle wash (176 m^2, 5.24 m in height),
i. perimeter fencing (2.4 m in height), gate access and perimeter landscaping (ca. 6 - 8 m in height),
j. site services,
k. surface water management infrastructure, including an overground rainwater harvesting tank (with a floor area of 86.6 m^2 and a capacity of 470 m^3),
l. fire pumps and a firefighting and control system,
m. a traffic management system,
n. an odour abatement system, with a 20 m high stack.

The proposed development will also consist of the following exempted development:

- Development of rooftop photovoltaic solar panels (with a cumulative area of 2,476 m^2).

This project element is also considered under this EIAR.

4.2.2 Construction Phase of the Proposed Development

It is estimated that the construction phase of the proposed development will take 12 months to complete.

The applicant intends on continuing operations at the existing waste facility building whilst constructing the proposed MRF 3 building, and proposed site infrastructural elements at the southern sections of the site, outside the boundary of the existing waste facility site.

Once the MRF 3 building and site infrastructural elements at the southern sections of the site are constructed, existing waste facility operations will cease and the existing building will be upgraded and expanded to become MRF 1, and MRF 2 will be constructed, as proposed. Operations at MRF 3 will commence whilst MRF 1 and MRF 2 are being constructed.

Construction work will generally be carried out during daylight hours. Construction work will be confined to the following times (unless otherwise agreed with the Local Authority):

- 07:00-19:00hrs on weekdays and 08:00-14:00hrs on Saturdays with no working on Sundays or Public Holidays.

The key construction elements (listed in approximate chronological construction order) will be as follows:

- Advance works;
- Development of temporary construction site compound;

- Site clearance;
- Site earthworks;
- Installation of site services and surface water management systems;
- Construction of site hard stand and granular formation surfaces;
- Construction of site buildings and structures;
- Installation of additional ancillary site infrastructure and elements.

All wastes generated during the construction phase of the proposed development will be segregated and stored temporarily on-site. Waste oil and diesel that may be generated during the construction phase will be stored in bunded, enclosed, covered locations, as necessary. All construction phase waste will be removed from the site and dispatched to one of the Applicant's own waste management facilities for either recovery, recycling or disposal (least preferred method of management).

The applicant intends on maximizing the reuse of reusable material generated on-site during the construction phase of the proposed development, in accordance with circular economy principles and the Waste Hierarchy as enshrined in the Waste Framework Directive (2008/98/EC).

The Applicant will aim to reutilize material within the confines of the development site as fill material, wherever possible.

A Construction Environmental Management Plan (CEMP) has been developed in order to manage, prevent and control potential environmental impacts associated with Construction Phase activities. This document is included in Appendix 4.2, Construction Environmental Management Plan, in Volume 3 of this EIAR.

4.2.3 Operational Phase of the Proposed Development

The following waste activities will be carried out at the proposed facility:

- The acceptance, processing and onward transfer of 100,000 tpa of rMSW.
- The acceptance, bulking and onward transfer of 50,000 tpa of food waste.
- The acceptance, processing and onward transfer of 100,000 tpa of C&D waste.
- The acceptance, bulking and onward transfer of 50,000 tpa of MDR waste.

The proposed facility will have the following hours of operation:

- hours of operation of the facility for waste acceptance, handling and consignment - 00:00 to 00:00 Monday to Sunday inclusive.
- hours of operation of the facility for waste processing – 07:00 – 23:00 Monday to Sunday inclusive.

While the facility is proposed to operate on a 24/7 basis, it is expected that the vast majority of waste acceptance, handling and consignment will occur during daytime and evening hours. Waste processing at fixed processing plant will not take place during the night.

All waste acceptance, storage and processing activities will be carried out inside the proposed buildings. No waste storage or processing will be carried out externally.

The proposed facility falls within the remit of the Industrial Emissions (IE) Directive (2010/75/EU), as implemented by the European Union (Industrial Emissions) Regulations (S.I. 138 of 2013), which amends the First Schedule of the 1992 EPA Act. As such, an Industrial Emissions (IE) licence application will be submitted to the EPA for the proposed facility and the facility will operate under an IE licence.

The IE licence will be enforced by the EPA and will control the following:

- Emission Limit Values for emissions to air and storm water.
- Monitoring requirements for emissions.
- Resource use and energy efficiency.
- Waste management control documentation.
- Waste acceptance and records.
- Storage and transfer of substances.
- Changes to operations and the physical fabric of the facility.
- Facility management including the requirement for an environmental management system (EMS).
- Accident prevention and emergency response including fire water retention; and,
- Operational controls.

In the event that the facility is no longer to be used for waste processing, it will be decommissioned in accordance with a Decommissioning Plan for the facility (which will be prepared as a condition of the IE Licence).

5. PLANNING AND POLICY

It is considered that the proposed development is in compliance with all relevant planning, waste management and climate related policies and objectives

The proposed development will serve as a key piece of indigenous waste management infrastructure which will serve to maximize the recovery / recycling of waste within Ireland.

In terms of European legislation, the proposed development will accord and comply with the Waste Framework and Landfill Directive, and transposing legislation obligations. The proposed development will support, promote and directly contribute to the management of waste as 'high up' the waste hierarchy as possible in accordance with EU Waste Law principles and EU waste management policy.

The proposed development will accord with national waste legislation, and national, regional and local waste policy, including the recently published National Waste Action Plan for the Circular Economy. The proposed development will accord with and support relevant policy objectives defined in all three regional waste management plans in Ireland.

The proposed development will support the achievement of EU, national and local climate policy objectives.

National planning policy, outlined in Project Ireland 2040 and the National Development Plan, will be supported by the proposed development. The proposed development will support the maximization of waste recovery, reprocessing and recycling in accordance with the principles and policies established in these policy documents.

The proposed development will support relevant waste management related policy objectives defined in the Regional Economic and Spatial Strategy for the Eastern Midlands Region.

A range of policy objectives including waste management, planning and climate related policy objectives outlined in the Fingal County Development Plan 2017 - 2023 and the Fingal Draft County Development Plan 2023 – 2029 are supported by the proposed development. The promotion of sustainable waste management is an important overarching goal identified in the Development Plan. The proposed development will support, promote and directly contribute to the achievement of this aim.

6. SCOPING AND CONSULTATION

The purpose of the EIA scoping process is to identify the key points and issues which are likely to be important during the environmental impact assessment (EIA) and to eliminate those that are not. The scoping process identifies sources or causes of potential environmental effects, the pathways by which the effects can happen, and the sensitive receptors, which are likely to be affected. It defines the appropriate level of detail for the information to be provided in the EIAR. The primary focus of scoping is to define the most appropriate assessment of significant effects related to the proposed intensification.

EIAR related scoping and consultation for this project consisted of several main elements, as below:

- Stakeholder Consultation;
- Consultation with Utility Companies;
- Virtual Public Consultation;
- Pre-application Consultation with An Bord Pleanála;
- Pre-application Consultation with the EPA.

6.1 Stakeholder Consultation

A consultation letter was sent out to 40 no. recipients on the 24th of March 2022. The recipients included relevant statutory consultees (as defined in Article 28 of the Planning and Development Regulations, as amended), non-governmental organisations (NGOs) and key stakeholders.

In total, 5 no. substantive scoping responses were received (not including summary acknowledgements). Copies of those responses are included in Appendix 6.2 of Volume 3 of this EIAR. A summary of the key issues raised and a note on how and where that issue is addressed in the EIAR is provided in Chapter 6 – Scoping and Consultation of Volume 2of this EIAR. The responses received were fully considered and where appropriate, the topics raised were included within the EIAR.

6.2 Consultation with Utility Companies

The following utility infrastructure is currently present at the development site:

- An existing overhead powerline;
- An ESB wayleave and mains;
- A gas wayleave and mains;
- Existing foul and stormwater drainage systems and a mains water supply (serving the applicant's existing waste management facility).

The proposed development will involve re-routing the existing overhead powerline traversing the site underground, culverting the surface water drainage ditch over a gas main, the development of an electrical sub-station on-site, and the development of new on-site infrastructure and services.

Early design consultation with ESB Networks, Gas Networks Ireland (GNI) and Irish Water was undertaken by the project team given the potential for the proposed development to impact on and interact with this existing infrastructure.

6.3 Virtual Public Consultation

The Applicant held a Virtual Public Consultation (VPC) event prior to submitting the planning application for the proposed development to provide the wider community with an understanding of what the proposed development will involve, and to provide members of the public with an opportunity to submit their views on the proposed development.

Advance notice of the event was published in the Dublin Gazette on the 28th of July 2022 and the Northside People West on the 3rd of August 2022.

This event was held online between the 4th and 22nd of August 2022. In total, 18 visitors entered the VPC event room over the course of the event. All attendees visited the room during the early stages of the event, with no new attendees visiting the site after the 12th of August 2022. Attendees spent just under 3 minutes on average viewing the event room. The 'Community Engagement' banner was the most viewed part of the room. This was followed by the 'Introduction,' 'Project Benefits' and 'Proposed Development' banners. 100% of visitors were from Ireland.

These traffic numbers were considered by the provider hosting the event to be low, relative to similar events held for development projects which constitute Strategic Infrastructure Development (SID). The applicant received no submissions on the proposed development during or after the hosting of the event.

6.4 Pre-application Consultation with An Bord Pleanála

A Strategic Infrastructure Development (SID) pre-application consultation meeting took place with An Bord Pleanála (ABP) on the 11th of February 2022. Various aspects of the proposed development were discussed with ABP representatives at this meeting. The Board advised on a number of environmental matters that needed to be considered and evaluated in the prospective EIAR (E.g., potential noise impacts, potential visual impact on Premier Business Park).

A summary of their comments during this meeting and how these matters were addressed in this EIAR is provided in Chapter 6 – Scoping and Consultation, of Volume 2 of this EIAR.

6.5 Pre-application Consultation with the EPA

The proposed facility will be required to operate under an Industrial Emissions (IE) licence from the Environmental Protection Agency (EPA). Considering this, a pre-application consultation regarding the operation of the proposed facility was carried out with the EPA on the 26th of May 2022.

The EPA proceeded to provide detail to the Applicant on the following:

- The IE licence application process generally.
- The need for the proposed facility to be designed and operated in accordance with 'Best Available Techniques' for such Materials Recovery Facilities.
- The need to adequately control emissions from the proposed facility, including odour, noise and aqueous emissions.
- The need to agree emission limit values for discharges to sewer with Irish Water in advance of making the prospective IE licence application to the EPA.

7. POPULATION AND HUMAN HEALTH

7.1 Introduction

This chapter has been prepared to examine the potential effects of the proposed development on population and human health in the receiving environment.

A walkover survey of the site and a desk-based study and an evaluation of each proposed development and their impact upon aspects relating to Population and Human Health was undertaken. Following this, mitigation measures and residual impacts were identified. The Population and Human Health Chapter was then completed. The following relevant population and human health aspects have been identified, Population, Land Use, Economic Activity and Employment, Human Health and Safety and Recreation, Amenity and Tourism.

7.2 Baseline Environment

The development site is situated approximately 2 km north-west of Finglas village and 2 km east of Blanchardstown village. The site is located south of the Ballycoolin Road and immediately north of the M50, approximately midway between Junctions 5 and 6.

Dunsink Landfill and agricultural lands are situated further south of the site on the opposite side of the M50.

There are 4 no. residential dwellings adjacent to the site on Barn Lodge Grove beyond the western boundary, known as Coolbrook Cottages. Further to the south-west of the site on Barn Lodge Grove there is a cluster of residential properties, some of which border the site's south-western boundary. Agricultural lands are situated further west of the site. Ballycoolin Road is situated ca. 180 metres north of the site. A number of residential dwellings are situated along this road ca. 200 m north-west of the site.

Stadium Business Park is situated ca. 240 metres north of the site. Premier Business Park is situated ca. 270 metres to the north-east of the site.

The National Orthopaedic Hospital Cappagh is located ca. 755m to the south-east of the site on the opposite side of the M50.

Various industrial land uses are located to the north-east of the site along the Cappagh Road including a MRF, operated by Starrus Eco Holdings Limited t/a Panda; Huntstown Quarry, which is operated by Roadstone; and a concrete batching plant operated by Kilsaran Concrete.

7.3 Potential Impacts

The proposed development has the potential to impact on the following population and human health elements: population, land use, economic activity and employment, human health and safety, and recreation, amenity and tourism. A summary of the potential effects the proposed development may have on these elements is presented in Table 7-1.

Table 7-1: Summary of Potential Impacts on Population and Human Health Elements

Activity	Potential Impact	Receptor	Quality / Duration	Probability	Significance
'Do Nothing' Scenario					
'Do Nothing' Scenario	Continued existence of existing development	Local population and economy	Neutral, long-term	Likely	Negligible
'Do Nothing' Scenario	Deficit in regional waste management capacity	Local population and economy	Negative, long-term	Likely	Significant
Construction Phase					
Construction Activity/Works	Securing / generating employment	Exiting / future employees	Positive, short-term	Likely	Moderate
Construction Activity/Works	Local population numbers	Local population	Positive, short-term	Likely	Negligible to slight
Construction Activity/Works	Benefits to local businesses	Local businesses	Positive, short-term	Likely	Slight
Construction Activity/Works	Health and Safety Impacts	Site workers	Negative, short-term	Likely	Moderate to very significant
Construction Activity/Works	Impact on recreation, amenity and tourism	Amenity value	Neutral, long-term	Likely	Negligible
Operational Phase					
Operation of the facility	Local population numbers	Local population	Positive, long-term	Likely	Negligible to slight
Operation of the facility	Securing / generating employment	Exiting / future employees	Positive, long-term	Likely	Slight
Operation of the facility	Benefits to local businesses	Local businesses	Positive, long-term	Likely	Slight
Operation of the facility	Circular Economy Benefits	Local population and economy	Positive, long-term	Likely	Significant
Operation of the facility	Health and Safety Impacts	Site Workers / Visitors	Negative, long-term	Likely	Moderate to very significant
Traffic on local roads	Traffic Accidents	Members of the Public	Negative	Unlikely	Not significant and imperceptible
On-site traffic	Traffic Accidents	Site staff	Negative	Unlikely	Significant to very significant
Operation of the facility	Major accident	Humans on and off-site	Negative, long-term	Unlikely	Significant to profound

A number of other impact assessment chapters contained in this EIAR are considered to be relevant due to the interrelationship between the impacts described in these chapters and population and human health. The proposed development may also impact on humans due to potential pollution, odour, noise or dust, for example. The following chapters have been considered in-depth whilst completing the population and human health impact assessment due to impact interrelationships that exist between the mentioned chapter and the population and human health chapter.

- Chapter 9 - Soils, Geology and Hydrogeology;
- Chapter 10 - Hydrology and Surface Water;
- Chapter 11 - Air Quality and Climate;
- Chapter 12 - Noise and Vibration;
- Chapter 13 - Traffic and Transportation;
- Chapter 15 - Landscape and Visual Impact.

7.4 Mitigation Measures

A summary of key mitigation measures for the protection of population and human health is presented below.

- Activities at the proposed facility will be controlled from a health and safety perspective in accordance with the Safety, Health and Welfare at Work Acts 2005 (as amended). A Health and Safety Management System will be in place for the site. In particular, a Safety Statement, a Traffic Management Plan, an Emergency Plan, an Environmental Accident Prevention Procedure and a Corrective-Preventative Action procedure will in place to manage and control health safety risks posed to persons on and off-site.
- A comprehensive and detailed emergency plan in place for managing and responding to potential accidents including major accidents will be adopted and implemented at the facility.
- The proposed facility will operate under an IE Licence which is administered and enforced by the EPA. All site operations and activities will be undertaken in accordance with this licence. Environmental emissions which may impinge upon human health including noise, air emissions and aqueous emissions will be monitored, regulated and controlled under this license.

Mitigation measures defined within the following chapters would also be applied to protect population and human health during the operational phase of the proposed development:

- Chapter 9 Geology and Hydrogeology - Measures in relation to water management and spill control are defined within this chapter.
- Chapter 10 Hydrology and Surface Water Quality - Measures in relation to surface water management and spill control are defined within this chapter.
- Chapter 11 Air Quality and Climate - Measures in relation to odour and dust emissions are defined within this chapter.
- Chapter 12 Noise and Vibration - measures in relation to noise control/minimization are defined within this chapter.
- Chapter 13 Traffic and Transportation - Measures in relation to traffic management are defined within this chapter.

7.5 Conclusions

With the adoption of the mitigation measures defined in this EIAR, as well the associated mitigation measures defined in interrelated EIAR topic chapters which are relevant to human health, the proposed development will not have any significant residual adverse effect on any population or human health element.

The proposed development will result in a number of negligible to slight, slight, moderate, and significant, positive effects on population and human health elements including positive effects on employment, local population, local business and in terms of contribution to the circular economy. Post-mitigation significant impacts are summarized below:

'Do Nothing' Impact

- Significant, long-term impact on local population and economy due to a deficit in regional waste management capacity.

Residual Operational Phase Impacts

- Significant, positive, long-term impact in terms of promoting the circular economy.

8. BIODIVERSITY

This chapter assesses the impacts on ecology associated with the proposed development. The purpose of this evaluation was to:

- Undertake a desktop review of available ecological data for both the receiving environment and greater area, including a review of European sites and nationally designated sites within the Zone of Influence.
- Undertake ecological field surveys of the receiving environment.
- Identify flora and fauna present within the footprint of all elements of the project.
- Evaluate the ecological significance of the receiving environment.
- Appraise the potential impacts of the project on the ecology of the receiving environment.
- Consider measures to mitigate the potential negative impact(s) of the project on the ecology of the receiving environment.

8.1 Baseline Environment

There are no habitats within the study area that conform to those listed under Annex I of the EU Habitats Directive. The dominant habitats within the site boundary are Improved agricultural grassland/ dry meadows & grassy verges mosaic (GA1/GS2), recolonising bare ground (ED3), scrub (WS1) buildings and artificial surfaces (BL3). Treelines (WL2), and a drainage ditch (FW4) run through the centre of the site and spoil and bare ground (ED2) form some of the boundaries of these fields within the site.

No rare or protected flora species protected under the Flora Protection Order (2022), listed in Annex II and IV of the EU Habitats Directive (92/43/ECC), or listed in the Irish Red Data were recorded during the surveys.

Butterfly-bush *Buddleja davidii* was recorded onsite in two locations. A row of Cherry laurel *Prunus laurocerasus* hedge runs offsite along the northern site boundary, with a single young rhododendron *ponticum* sapling within.

The desktop review using the National Biodiversity Data Centre's Bird Atlas 2007-2011 and Birds of Ireland datasets, highlighted that within 2km of the site a total of 30 (additional to those species recorded during the site visits) species have been recorded within the two 2km squares overlapping the proposed development site.

A total of 19 bird species were noted during the CBS transect surveys on the 12th May and 17th June 2022. No Red-listed Species were recorded. Three amber-listed species was recorded, namely greenfinch, starling and swallow. They are Amber-listed because of their unfavourable conservation status. The remaining species are Green-listed, species of favourable conservation status (Gilbert et al, 2021).

Hedgehog, hare, and red fox have been recorded within the area and could potentially be present within treelines of the site. Rabbit Oryctolagus cuniculus (medium-impact invasive species) droppings were recorded throughout the site. No other mammal sightings or signs were recorded during the survey.

The National Biodiversity Data Centre's 'Bat Landscapes' map layer indicates that the site itself is situated in an area of moderate value for bats in general. The hedgerows, treelines, woodlands, and drainage ditches within and bounding the site offer potential foraging habitat for bats.
The drainage ditch may be suitable for frog spawn deposition due to its lack of flow.

Several bumblebee bee species were observed foraging amongst the flowering species onsite during the site walkovers.

8.2 Potential Impacts

Construction phase and operational phase activities have the potential to affect the receiving ecological environment. A summary of these impacts is presented below:

- The proposed development will have no impact on protected sites (e.g., Special Areas of Conservation etc.) mainly due to the distance between the development site and such areas and given the lack of a hydrological link between the development site and these areas.
- Certain habitats contained at the development site will be lost due to the construction of the proposed development, leading to a slight negative impact (e.g., improved grassland, treeline, scrub).
- Construction phase activities may cause the spread of invasive species on and off-site.
- The removal of treelines, hedgerows and the drainage ditch on-site may result loss of habitat used by birds, mammals, bats, and frogs, leading to a slight impact.
- Increased artificial lighting during hours of darkness would decrease the potential foraging habitat for bats onsite. Therefore, impacts to bats are envisaged during the operational phase to be negative, reversible, long-term slight in a local context.

8.3 Mitigation Measures

Mitigation measures have been developed which avoid and minimise impacts on biodiversity, however. A summary list of key mitigation measures that will be implemented to protect local ecology is set out below:

- Implementation of a Construction Environmental Management Plan (CEMP). This document is contained in Appendix 4.2 of Volume 3 of this EIAR.
- An Invasive Species Management Plan will be adopted during construction of the proposed development. This document is contained in Appendix 4.2 of Volume 3 of this EIAR.
- Implementation of various water quality protection mitigation measures (e.g., use of sediment basins during construction, use of fuel bunding during operations, adoption of spill response procedures etc.)
- Development and ongoing maintenance of 651 m of new native hedgerow. The hedgerows will be dominated by hawthorn and elder with willow and alder frequently used.
- The removal of trees and hedgerow trimming will be undertaken outside of the bird breeding season (March 1st to August 31st inclusive). This will help protect nesting birds.
- Pre-construction bat and frog surveys. If these species observed on-site, an appropriate response will be formulated in order to prevent negative impacts to these species

The proposed development will not have any significant cumulative or interacting impact on Biodiversity with the adoption of the proposed mitigation measures.

8.4 Conclusions

Following the full implementation of the mitigation measures defined above, the residual impacts on biodiversity due to the proposed development vary from Imperceptible to Not Significant.

9. SOILS, GEOLOGY AND HYDROGEOLOGY

9.1 Introduction

This chapter has been prepared to examine the potential significant effects of the proposed development on Soils, Geology and Hydrogeology present in the receiving environment at and surrounding the proposed development site.

The potential significant effects of the proposed development are assessed, having taken account of mitigation measures to reduce or eliminate any residual effects on receiving Soils, Geology and Hydrogeology.

9.2 Baseline Environment

9.2.1 Soils and Geology

The subsoils present at the proposed development site were taken from the GSI 1:50,000 Quaternary Geology of Ireland map (GSI, 2022) and comprise of 'till derived from limestones' (TLs).

At surface, the intrusive site investigations completed within the proposed development site generally encountered concrete to a maximum depth of 0.30m BGL or topsoil to a maximum depth of 0.30m BGL.

Made Ground deposits were encountered from surface or beneath the concrete and topsoil to a maximum depth of 0.40m BGL to 1.30m BGL.

Cohesive deposits were encountered beneath the Made Ground and were described typically as *brown slightly sandy slightly gravelly CLAY with occasional cobbles and boulders* overlying *a dark grey slightly sandy slightly gravelly CLAY with occasional cobbles and boulders*

Granular deposits were encountered below the cohesive deposits at some locations and were typically described as *grey and brown slightly clayey sandy subangular to subrounded fine to coarse GRAVEL with occasional cobbles*.

Bedrock was encountered during the intrusive site investigation varying in depth from 3.30m BGL to 4.15m BGL. Rotary core boreholes recovered medium strong thinly bedded dark grey fine grained argillaceous fossiliferous LIMESTONE.

Chemical and environmental laboratory testing was scheduled on a range of soil samples (20 in total from across the site). Testing results were compared limit values for chemical parameters defined under the following standards to determine the presence of contamination on-site:

- Dutch Guideline Values (*Dutch List*);
- LQM / CIEH Suitable for Use Levels Human Health Risk Assessment.

All samples returned for the site have concentrations below the LQM/CIEH commercial screening criteria. All but two parameters were below the Dutch List screening criteria. These limit value exceedances constitute minor, localized exceedances, with the vast majority of monitoring results complying with the Dutch List limits.

There is no evidence that historic land use activities on-site (i.e., historic agriculture, storage of scrap vehicles) have caused soil contamination on-site.

9.2.2 Hydrogeology

The Groundwater Vulnerability classified by the GSI at the proposed development site ranges from 'extreme' to 'high' due to thin layers (<3m) of moderate to high permeability subsoil above bedrock.

The proposed development is located within the Dublin Groundwater Body (GWB). The Dublin GWB is located in the Greater Dublin City area and extends southwest towards Kildare. The GWB is generally low lying, with higher elevations to the south at the foothills of the Dublin Mountains and to the northwest. Elevations decrease towards river estuaries. According to interim classification work carried out as part of the Water Framework Directive and published by the EPA, the Dublin GWB is classified as having 'Good' status in terms of quality and quantity. The development site lies above a section of the Dublin GWB that comprises a locally important aquifer that consists of bedrock which is moderately productive only in local zones.

Groundwater monitoring was carried out at four groundwater wells on-site across 2021 and 2022. The chemical analysis results were compared to overall threshold value (OTV) from the European Communities Environmental Objectives (Groundwater) Regulations, 2010, as amended, or where appropriate, the interim guideline values (IGVs) from the EPA publication, Towards Setting Guideline Values for the Protection of Groundwater in Ireland (EPA, 2003). Based on this monitoring it was determined that there are no issues with existing groundwater quality on-site.

9.3 Potential Impacts

The following construction activities may impact soils, geology and/or hydrogeology:

- Advance works;
- Development of temporary construction site compound;
- Site clearance;
- Site earthworks;
- Installation of site services and surface water management systems;
- Construction of site hard stand and granular formation surfaces;
- Construction of site buildings and structures;
- Installation of additional ancillary site infrastructure and elements.

Operational phase activities, such as waste handling and storage, and diesel fuel storage on-site, also have the potential to affect soils, geology and hydrogeology at and surrounding the site.

A summary of the main potential impacts the proposed development may have on soils, geology and hydrogeology is presented below:

Construction Phase Impacts

- There may be an increased risk to groundwater due to overburden removal.
- Silt material may become entrained in surface water, which may in turn percolate to groundwater, and have indirect adverse effect on groundwater quality (i.e., through increasing suspended solid concentration in groundwater).
- Damming, pumping, excavation and backfilling works associated with the culverting of the surface water drainage ditch traversing the site poses a particular risk to surface water quality present in this drainage ditch, which may percolate to groundwater.
- The use of construction plant and associated refuelling and storage of fuels and hydrocarbons with potential for spills or leaks could result in contamination of the underlying aquifer.
- Temporary rubble stockpiles created from the demolition of existing concrete facility elements may result in the generation of alkaline discharges to groundwater.
- Temporary rubble stockpiles created from the demolition of existing hardstanding may result in the generation of alkaline discharges to groundwater.
- Concrete/cement works required for the proposed structures/buildings on-site may result in the generation of alkaline discharges to groundwater.

Operational Phase Impacts

- Fuel storage, and vehicle use, parking and re-fuelling on-site has the potential to result in accidental leaks or spills of fuel/oil, which could potentially impact ground and groundwater.
- An uncontrolled spillage from the 'dirty' water storage tank could potentially impact ground and groundwater.
- The release of contaminated firewater during fire event could potentially impact ground and groundwater.

9.4 Mitigation Measures

The following key mitigation measures to protect the receiving soils, geology and hydrogeology environment will be implemented as part of the proposed development:

- The construction works will be designed, overseen, and checked by geotechnical and/or civil engineers, suitably qualified and experienced in excavation and earthworks design and construction methodologies.
- To ensure the highest standards of environmental protection, the proposed development has been designed to operate in accordance with Best Available Techniques for such waste management facilities defined by the European Commission.
- A Construction Environmental Management Plan (CEMP) has been prepared for the proposed development. This document is found in Appendix 4.2 of Volume 2 of this EIAR.

- Control and mitigation measures for the protection of surface water (e.g. from run-off of silt, cement based material etc.) are defined in the Chapter 10 - Hydrology and Surface Water Quality of Volume 2 of this EIAR. These measures will prevent the accidental discharge of polluting material to surface waters in turn impacting groundwater.
- Spill protection measures and emergency spill response procedures will be implemented during the construction and operational phases of the proposed development. Fuel stored on-site during facility operations will be stored in a bunded double skinned diesel tank. Oils stored on-site will be stored in indoor locations on sump pallet bunds. All tanks and bunds on-site will be routinely integrity tested and maintained in accordance with the requirements of the prospective IE licence for the proposed facility.
- Sufficient firewater retention capabilities will be provided on-site during the operational phase. Contaminated firewater will be retained inside the proposed buildings which will act as a large bund in the event of a fire.

9.5 Conclusions

The impact on soils, geology and hydrogeology associated with the construction and operational phases of the proposed development has been determined to be imperceptible with the adoption of the mitigation measures proposed.

The proposed development will not have any significant cumulative or interacting impact on soils, geology or hydrogeology the adoption of the proposed mitigation measures.

10. HYDROLOGY AND SURFACE WATER QUALITY

10.1 Introduction

This chapter has been prepared to examine the potential effects of the proposed development on the hydrology in the local environment.

10.2 Baseline Environment

The existing waste facility is covered with a concrete hard stand. The site boundary, with the exception of a raised entrance gate, is surrounded by a concrete block kerb which contains storm water run-off from the site. Rainwater falling on the concrete hardstand is conveyed via a drainage network including gulleys to two underground soakpits along the southern boundary of the site. A storm water emergency overflow system is in place to allow excess surface water to overflow to the public stormwater network from the site. The public stormwater network is located at the adjacent access road.

Lands to the south of the existing waste facility which are within the confines of the development site mainly consist of soft surface grassland / scrubland areas. A small drainage ditch traverses these lands in a northwest to southeast / east direction. This drainage ditch comes to the surface just to the south-west of the existing waste facility, between the existing facility and an adjoining property at Coolbrook Cottages.

The drainage ditch exiting the site at its south-eastern corner is culverted beneath the M50, before rising to the surface again on the opposite side of the motorway. From that point, it flows in an eastward direction a short distance and enters the Dunsink Landfill. The ditch then drains to Scribblestown Stream and then the River Tolka.

The development site lies within the Water Framework Directive (WFD) catchment HA 09 known as the Liffey and Dublin Bay catchment. This catchment includes the area drained by the River Liffey and by all streams entering tidal water between Sea Mount and Sorrento Point, Co. Dublin, draining a total area of 1,616km^2. The development site lies within the Tolka_SC_020 WFD sub-catchment.

Water quality monitoring at the River Tolka is carried out under the Water Framework Directive Monitoring Programme by the EPA. A water quality status is assigned to surface bodies based on this monitoring. The most recent water quality status assigned to the TOLKA_050 sub-basin upstream and downstream of where the Scribblestown Stream enters the River Tolka is ‘Poor.

One round of surface water quality monitoring was undertaken at two surface water monitoring locations identified as ‘Monitoring Point (MP) 1 and ‘Monitoring Point (MP) 2’ along the surface water drainage ditch which traverses the development site south of the existing waste facility. It is evident from the testing results that surface water quality at the two monitoring locations downstream of the site are not satisfying all ‘Good’ status requirements with respect to physio-chemical characteristics. EQS’s defined in the European Union Environmental Objectives (Surface Waters) Regulations 2009, as amended, are exceeded for Orthophosphate, Total Ammonia (mean and 95%ile), Biochemical Oxygen Demand (BOD) and Copper.

10.3 Proposed Drainage for the Development

The surface water drainage system for the site will be designed to minimize surface water run-off rates and prevent the discharge of pollution material from the site. The surface water management system will be divided into three surface water management zones. Zone 1 will serve the concrete paved yard area on-site. Zone 2 will serve non-paved yard area situated to the south of the site. Zone 3 will serve all building roof areas on-site. Rainwater falling on-site will be collected in one of these three systems. All stormwater run-off on-site will drain to stormwater attenuation systems and hydrocarbon retention interceptors.

Wash water and domestic wastewater generated on-site will be discharged to public gravity foul sewer via a proposed connection at Entrance 2.

The open surface water drainage ditch traversing the site will need to be culverted as part of the proposed development. The proposed culvert will be designed to appropriate design standards and constructed under Section 50 licence from the Office of Public Works.

10.4 Potential Impacts

The following construction activities may impact hydrology and surface water quality:

- Advance works;
- Development of temporary construction site compound;
- Site clearance;
- Site earthworks;
- Installation of site services and surface water management systems;
- Construction of site hard stand and granular formation surfaces;
- Construction of site buildings and structures;
- Installation of additional ancillary site infrastructure and elements.

Operational phase activities, such as waste handling and storage, and diesel fuel storage on-site, also have the potential to affect hydrology and surface water quality.

A summary of the main potential impacts the proposed development may have on hydrology and surface water quality is presented below:

Construction Phase Impacts

- Generation of alkaline surface water run-off from construction works.
- Construction works may cause increased sediment loads in surface water.
- Potential for surface water contamination from fuel spills/leakages.
- The use of construction plant and associated refuelling and storage of fuels and hydrocarbons with potential for spills or leaks could result in contamination of surface waters.
- Damming, pumping, excavation and backfilling works associated with the culverting of the surface water drainage ditch traversing the site poses a particular risk to surface water quality present in this drainage ditch.

Operational Phase Impacts

- Fuel storage, and vehicle use, parking and re-fuelling on-site has the potential to result in accidental leaks or spills of fuel/oil, which could potentially impact receiving surface water quality.
- An uncontrolled spillage from the 'dirty' water storage tank could potentially impact ground and groundwater, which, in turn, may feed into a receiving surface water body and effect its water quality.
- The release of contaminated firewater during fire event could potentially impact hydrology and receiving surface water quality.

10.5 Mitigation Measures

The following key mitigation measures to protect the receiving hydrology and surface water quality will be implemented as part of the proposed development:

- The construction works will be designed, overseen, and checked by geotechnical and/or civil engineers, suitably qualified and experienced in excavation and earthworks design and construction methodologies.
- To ensure the highest standards of environmental protection, the proposed development has been designed to operate in accordance with Best Available Techniques for such waste management facilities defined by the European Commission.
- A Construction Environmental Management Plan (CEMP) has been prepared for the proposed development.
- A comprehensive set of sediment control measures will be implemented during construction to prevent the entrainment of sediment in surface water and the run-off of this surface water to the receiving surface water environment. Siltation of surface waters can impact receiving surface water quality.
- A comprehensive set of cement control measures will be implemented during construction to prevent the entrainment of cement in surface water and the run-off of this surface water to the receiving surface water environment. Cement is highly alkaline and can negatively impact receiving surface water quality.
- A comprehensive set of mitigation measures will be implemented during culvert construction works to prevent these works impacting the drainage ditch traversing the site. Measures such as the use of cut off trenches and drip trays will serve to protect the drainage ditch during these works.
- Spill protection measures and emergency spill response procedures will be implemented during the construction and operational phases of the proposed development.
- Operational phase waste handling, storage and processing will take place indoors under cover. This will prevent surface water generated on-site coming into contact with waste and becoming contaminated.
- Sufficient firewater retention capabilities will be provided on-site during the operational phase. Contaminated firewater will be retained inside the proposed buildings which will act as a large bund in the event of a fire.

10.6 Conclusions

The proposed development will be constructed, operated and decommissioned in a manner that ensures it will have no impact water quality in the receiving water environment, or on the water quality status of receiving surface waters.

A comprehensive set of design and mitigation measures have been developed to robustly protect the receiving hydrological environment, and to ensure that only uncontaminated waters are discharged from the proposed development site to the receiving surface water environment.

The proposed development will not impinge on the Water Framework Directive objectives to restore good water quality status at receiving surface waters.

The residual significance of the effects of the proposed development on the receiving surface water environment will be Imperceptible taking account of these mitigation measures.

11. AIR AND CLIMATE

11.1 Introduction

An air quality, climate and odour impact assessment of the proposed development has been carried out.

The assessment has been conducted in the context of current relevant standards and guidance and identifies any requirements or possibilities for mitigation. The modelling study includes a determination of whether the odour emissions from the site, will lead to ambient concentrations which are in compliance with the criterion of 1.5 OU_E/m^3 as a 98^{th} percentile of the hourly average concentrations and to identify the location and maximum of the worst-case ground level odour concentrations. The potential for construction phase impacts with respect to dust nuisance and human health impacts have also been assessed. In addition, the impact of the construction and operational phase vehicle movements associated with the development has been assessed with respect to odour, air quality and climate impacts.

11.2 Receiving Environment

In terms of the existing air quality environment, a review of published EPA data for the Dublin region indicates that levels of nitrogen dioxide, particulate matter less than 10 microns and particulate matter less than 2.5 microns are well below the National and European Union (EU) ambient air quality standards.

The existing climate baseline can be determined by reference to data from the EPA on Ireland's total greenhouse gas (GHG) emissions and compliance with the European Union's Regulation 2018/842. The EPA state that Ireland had total ESR GHG emissions of 46.16 Mt CO_2eq in 2021. This is 2.71 Mt CO_2eq higher than Ireland's annual target for emissions in 2021. The EPA predict that Ireland can comply with the GHG targets for 2021 – 2030 provided full implementation of the measures outlined within the Climate Action Plan and the use of the flexibilities available.

11.3 Potential Impacts

Embodied Carbon

The construction phase of the proposed development will result in a number of GHG emissions from various sources. Embodied carbon is carbon dioxide emitted during the manufacture, transport and construction of building materials, together with end-of-life emissions. The total construction phase embodied emissions totals 3,122 tonnes CO_2e, this is 0.009% of Ireland's 2030 GHG emission target and 0.062% of the Built Environment CAP target. The predicted impact to climate during the construction phase is temporary and negative but, overall, not significant.

Construction Dust

There are a number of high sensitivity residential properties in close proximity to the site along Barn Lodge Grove. The surrounding area was assigned a level of medium sensitivity to dust soiling impacts and of low sensitivity to human health related dust impacts as per the IAQM criteria.

The demolition works, earthworks, construction works, and construction vehicle movements were reviewed in light of the IAQM dust generating criteria and it was determined that there was at most a medium risk of dust soiling impacts and a low risk of dust related human health impacts as a result of the proposed development. A detailed dust minimisation plan was developed as part of the air quality assessment and outlines mitigation measures to ensure dust impacts are minimised. Once the measures outlined in the plan are implemented construction phase dust emissions will have a temporary, negative and imperceptible impact on air quality.

Traffic Modelling

Changes in traffic due to the proposed development during the operational phase were assessed using the UK DMRB criteria with respect to air quality impacts on nearby sensitive receptors (residential properties) and climate impacts.

Modelling of operational phase nitrogen dioxide (NO_2) traffic emissions was carried out and it was determined that the predicted concentrations with the proposed development in place will be in compliance with the ambient air quality standards for NO_2. The impact of operational traffic emissions on air quality is predicted to be long-term and imperceptible.

In relation to climate, carbon dioxide (CO_2) emissions from vehicles will increase by an imperceptible amount with the proposed development in place and will be significantly below Ireland's future GHG targets. The predicted impact to climate is long-term and imperceptible.

Operational Power Demand

During the operational phase the proposed development will be powered primarily by electricity from the National Grid. In addition, photovoltaic solar panels will be installed on the main buildings to provide some of the power to the site and to meet the renewable energy requirements for the development. The indirect CO_2 emissions associated with the proposed development's electricity requirements can be calculated using the carbon intensity of the National Grid. The operational phase power demand for the full site will be 6,000 MWh annually. A total of 11.6% of the proposed developments power demand can be generated by the on-site solar panels, with the remaining fraction being supplied by the National Grid. Using the 2020 carbon intensity this will result in the indirect emissions of 1,570 tonnes CO_2 annually however this will reduce as the renewables percentage on the national grid is increased in line with the 2030 target of up to 80% renewables on the national grid as per the 2021 Climate Action Plan.

In addition to operational electricity, there is an operational demand for 15,000 litres of diesel annually which results in emissions of 39.55 Tonnes CO_2 annually. Operational phase impacts to climate will be long-term, negative and slight but overall, not significant.

However, the proposed development has the potential to have a residual benefit with respect to climate by diverting waste from landfill and therefore reducing the wastes embodied carbon.

Odour Dispersion Modelling

There is the potential for odour emissions from the facility due to the nature of the wastes being processed. As a result, an odour abatement unit will be installed to ensure all odours are minimised.

An odour dispersion modelling assessment was carried out of the odour abatement unit stack located on MRF1 using the United States Environmental Protection Agency's regulatory model AERMOD to assess the effect of odour emissions from the operational phase of the proposed development.

Details of the 98th%ile of 1-hour mean odour concentrations at the worst-case off-site location are given over an historical five-year period ranging from 2017 to 2021 based on the USEPA approved AERMOD model (version 21112). The worst-case scenario for the 98th%ile of 1-hour concentrations occurs in 2021 where the maximum off-site concentrations is 63% of the guideline value of 1.5 OU_E/m^3 at the worst-case receptor. Based on the results of the modelling assessment, no nearby receptors are predicted to experience odour nuisance issues as a result of the proposed development. Results are within the acceptable range for odour emissions.

11.4 Mitigation Measures

Construction Phase

A detailed construction phase dust minimisation plan has been developed in Appendix 11.3 of Volume 3 of this EIAR. The measures outlined within the plan will be implemented throughout the construction phase of the proposed development to ensure dust emissions are minimised.

Operational Phase

An odour management plan will be developed for the proposed development. This plan will include management strategies for the prevention of emissions and a strict preventative maintenance and management program for ensuring that all odour mitigation techniques remain operational at optimal capacity throughout all operational scenarios.

The existing facility currently implements a number of best practice measures to prevent significant dust emissions from the site, these measures will continue to be enforced once the proposed development is in place.

11.5 Conclusions

The impact on odour, air quality and climate as a result of the proposed development is not significant and thus no residual impact is anticipated. In accordance with the EPA Guidelines (EPA 2022) the likely effects are considered overall not significant and long-term.

12. NOISE AND VIBRATION

12.1 Introduction

Chapter 12 *'Noise and Vibration'* of the EIAR is a noise and vibration assessment that appraises potential noise and vibration impacts from the proposed development. The chapter details the existing development and proposed development at the development site with regards to noise and vibration. A comprehensive review of potential significant noise and vibration effects of the proposed development is provided.

12.2 Baseline Environment

Baseline noise monitoring has been carried out at the nearest noise sensitive locations to the proposed development, to establish the existing background noise levels. This has enabled noise criteria for the site to be derived for both the construction and operational phases of the development. Baseline noise monitoring indicates that the dominant noise is from the surrounding road network, with significant volumes of traffic noted on the M50, Ballycoolin Road and adjoining roads. Baseline noise monitoring was used to derive appropriate noise limits for construction based on British Standard BS 5228-1:2009+A1:2014 *Code of practice for noise and vibration control on construction and open sites – Part 1: Noise.*

For the operational phase, noise limits have been derived considering the results from baseline noise monitoring and guidance outlined in EPA document *"Guidance Note for Noise: Licence Applications, Surveys and Assessments in Relation to Scheduled Activities (NG4)"*. Given that the proposed facility will operate under an IE licence granted and enforced by the EPA, this methodology is considered appropriate for the development. The proposed operational noise limits at the nearest noise sensitive locations are set out in this chapter for daytime, evening and night time periods.

12.3 Potential Impacts

The nearest residential properties to proposed on-site construction works and on-site operations, are sufficiently distant that vibration is not likely to be perceivable by residents at their dwellings and building damage will not occur from construction or operational vibration. Therefore, construction and operational vibration are not considered further in this assessment.

Noise has been predicted for the construction and operational phases using 3-D noise modelling software. Construction noise at the nearest noise sensitive locations was calculated using data from BS 5228-1:2009+A1:2014. The noise from the proposed construction activities and existing waste facility activities are considered cumulatively and are appraised against noise limits also defined in BS 5228-1:2009+A1:2014.

The construction noise limits are expected to be met for all activities, except during site clearance works, where the limit is exceeded marginally. With the proposed mitigation measures detailed in this chapter noise at the nearest location is predicted to be within the construction noise limits during site clearance.

The main activities during the operation of the proposed development are waste acceptance, processing, storage and onward transfer. This assessment considered the facility operating at its maximum capacity. The proposed hours of operation of the facility (for waste acceptance, processing and consignment from the facility) are 00:00 to 00:00 Monday to Sunday inclusive. While the facility is proposed to operate on a 24/7 basis, it is expected that the vast majority of vehicle movements and processing operations will occur during the daytime and evening. During the night-time, fixed items of plant will not be operational, with mobile plant only operating at night.

Noise predictions have been carried out according to the International Standard ISO 9313-2: 1996 *Acoustics - Attenuation of sound during propagation outdoors – Part 2: General Method of calculation*. Details of operational assumptions for moving vehicles and mobile and stationary plant are described in this chapter. Operational noise has been predicted using sound power level data sourced from recognised acoustic standards, measurements and manufacturer data.

There is potential for noise breakout from the proposed facility buildings through the building façade, roof and fast acting roller shutter doors affecting properties immediately west of the at Coolbrook Cottages. Minimum sound insulation performance for walls and roofs of the proposed facility building and fast acting roller doors have been recommended as mitigation to prevent noise breakout occurring.

Predicted operational noise levels were calculated at the nearest noise sensitive locations (assuming the implementation of the above mitigation measures) and assessed against operational noise criteria.

With the identified noise mitigation measures, predicted operational noise levels are below the daytime, evening and night-time noise limits defined in the EPA's NG4 guidelines for all noise sensitive locations. The predicted noise levels are also below current ambient noise levels at the nearest noise sensitive locations. Therefore, it is likely that traffic noise will mask the noise from the proposed development.

12.4 Mitigation Measures

A summary of the noise related mitigation to be implemented as part of the proposed development is providing below:

12.4.1 Construction Phase Mitigation Measures

- Use of hoarding to attenuate noise.
- Carrying out of construction phase noise monitoring.
- Good construction practice for the prevention of noise (e.g., adopting a strict speed limit, minimizing drop heights, limiting working hours, preventing engine revving and idling etc.).

12.4.2 Operational Phase Mitigation Measures

- Use of fasting acting roller shutter doors to prevent noise breakout.
- Ensuring building walls and roofs meet a defined minimum sound insulation performance.
- Operating the on-site truck wash during day-time hours only.
- Good operational practice for the prevention of noise (e.g., adopting a strict speed limit, minimizing drop heights preventing engine revving and idling etc.).

12.5 Residual Impacts

Construction phase activities and operational phase activities will not have a significant adverse effect on surrounding noise sensitive locations, having regard to the noise prediction modelling undertaken and considering the implementation of the identified noise mitigation measures.

During the construction phase, noise predictions indicate that there is potential for short term noise impacts on nearby receptors during the site clearance works. With the adoption of the proposed construction phase mitigation measures, these impacts will be Not Significant.

The predicted operational phase noise emissions are below the noise limit values detailed in the EPAs NG4 guidance document. The predicted operational noise levels are lower than the current ambient noise levels at nearby noise sensitive locations and the current ambient noise will serve to mask noise from the proposed development. The predicted change in road traffic noise resulting from site operations was modelled using CRTN. When the predicted operational traffic flow is added to the existing baseline traffic flow, the baseline noise level shows a negligible increase in predicted traffic noise levels. The predicted operational phase noise impacts are therefore Not Significant.

13. TRAFFIC AND TRANSPORTATION

13.1 Introduction

Chapter 13 *'Traffic and Transportation'* of the EIAR is a Traffic & Transport Assessment and provides details of the traffic characteristics of the existing development and proposed development at Unit 1 Cappogue Industrial Park, Ballycoolin Road, Cappogue, Dublin 11 and provides a comprehensive review of the potential significant traffic effects of the proposed development. Chapter 13 sets out the existing and baseline traffic environments, forecasts travel demand characteristics of the proposed development, it evaluates the ability of the transportation network to accommodate the traffic arising both directly and indirectly and provides an assessment and categorisation of the forecast effects on the receiving road network environment.

The approach to the study accords with policy and guidance both at a national and local level. The adopted methodology accords with current best practices and guidance as published by Transport Infrastructure Ireland and this is the primary reference for the assessment of the magnitude and significance of the forecast traffic impact of the proposed development on the receiving transport network.

13.2 Potential Impacts

The existing facility is accessed via a single carriage access road within Cappogue Industrial Park from the Ballycoolin Road. The entrance gate is located on the eastern boundary of the facility. All traffic generated by the proposed development during both the construction and operational phases of the site will be accommodated by the existing access road and infrastructure connecting Cappogue Industrial Park and Premier Business Park to Ballycoolin Road.

It is proposed that development generated HGV will chiefly use Ballycoolin Road and Cappagh Road traversing haul routes that comprise the principal roads serving the Dublin Enterprise Zone which Fingal County Council acknowledges have been upgraded to a high standard to accommodate the locally zoned lands of the Dublin Enterprise Zone and have been designed to cater for the type of traffic generated by the proposed development.

Chapter 13 considers the proposed development receiving 300,000 tonnes or materials per annum in all future scenarios. In total the proposed development is forecast to generate a daily volume of 46 no. cars/vans, 203 no. smaller (3-12t) HGV importing materials and 54 larger (15-25t) HGV exporting. Higher or robust values of traffic generation are used in the road network capacity assessments.

The road network assessments examine cumulative effects generally by including for network traffic growth which is linked to economic growth and development. The appropriate traffic growth rates are those published by TII for national roads in the metropolitan area of Dublin. Cumulative effects are also examined in a sensitivity scenario which assumes the further development of the Cappogue Industrial Park and Premier Business Park zoned lands all accessed from Ballycoolin Road.

The forecast increase in total traffic flows on the receiving roads within the study scope are below 10% and thus sub-threshold in all cases. The forecast increase in total traffic flows on the immediate receiving environment of Ballycoolin Road and Cappagh Road is generally less than 2% save for the internal roads of Cappogue Industrial Park.

The Ballycoolin Road traffic signals at Premier Business Park and the Ballycoolin Road/Cappagh Road Roundabout have generous geometry and significant capacity and from observation alone can be seen to operate well. The recorded network traffic flows show an uncongested road network environment. The forecast peak hour traffic generation of the proposed development results in a sub-threshold incremental increase in traffic flows and it follows that the proposed development will not give rise to capacity problems on the receiving network. The peak hour volume of traffic throughput at other local junctions is not significant. The forecast volume of traffic generation is not such as to be of concern with respect to capacity and this is confirmed by the detailed traffic modelling of definitive scenarios both with and without the proposed development.

The results of the detailed modelling analyses serve to confirm that the existing Ballycoolin Road traffic signals at Premier Business Park and the Ballycoolin Road/Cappagh Road Roundabout have sufficient capacity to accommodate the traffic arising from both the permitted and proposed development. Considering forecast network traffic growth and the development of both permitted and proposed developments the existing junctions are shown to operate with the optimum level of service and with considerable residual capacity in both the year of opening and future assessment years. Comparing the results of the junction capacity models for the various 'do-nothing' and 'do-something' scenarios demonstrates that the impact of the proposed development is not significant.

Prior to the operational phase, construction traffic will be generated by the proposed development. The primary generators of traffic on the public road network during construction will be construction staff and the delivery of construction materials. Based on similar projects it is estimated traffic impact on network capacity during construction will be a fraction of that during the operational phase and thus not significant.

13.3 Conclusions

The potential significant effects of the proposed development are assessed having taken account of mitigation measures to reduce or eliminate any residual impacts on the surrounding and receiving transport network. The assessments provided in Chapter 13 examine and confirm that the traffic generated by the proposed development does not have the potential to give rise to a premature or unacceptable reduction in the level of service available to road users on national or regional roads or their junctions in the vicinity of the proposed development. Analyses confirm that the proposed development can proceed complementary to safeguarding the capacity, safety and operational efficiency of the receiving national and regional road network and the roads system serving the Dublin Enterprise Zone.

14. CULTURAL HERITAGE

14.1 Introduction

Chapter 14 has been prepared to examine the potential significant effects of the proposed development on the archaeological, architectural and cultural heritage resource in the local environments.

The potential significant effects of the proposed developments are assessed, having taken account of mitigation measures to reduce or eliminate any residual effects on the surrounding archaeological, architectural and cultural heritage.

14.2 Baseline Environment

The site of the proposed development is a mixture of grassland and scrubland including a section of the extant townland boundary between Cappogue and Dunsink which is a shallow ditch and hedge-topped earthen bank. There is evidence of recent maintenance of this ditch. The M50 motorway is located 50m to the south of the proposed development. The proposed development will see the construction of new buildings, services, and associated landscaping and site works, at this location.

14.3 Impact Assessment

The construction of the proposed development has the potential to have a permanent, direct, negative effect on any previously unrecorded archaeological remains that may exist within the development footprint. The risk of this occurring is considered to be unlikely. There will be a temporary, reversible, imperceptible visual effect on the archaeological and architectural resource during the construction phase of the proposed development. There will be a long-term, reversible, imperceptible visual effect on archaeological and architectural resources in the study area during the operational phase of the proposed development. There will be no effects on archaeological, architectural or cultural heritage resources in the study area during the decommissioning phase of the proposed development. There will be no cumulative effects on the archaeological, architectural or cultural heritage resource.

14.4 Mitigation Measures

The following mitigation measure is proposed to prevent the construction phase of the proposed development having a negative impact on any previously unrecorded archaeological remains that may exist within the development footprint:

- Monitoring will be carried out under licence to the Department of Housing, Local Government and Heritage and the National Museum of Ireland. Provision will be made for the full excavation and recording of any archaeological features or deposits that may be exposed during monitoring.

14.5 Residual Impacts

Following the adoption of the proposed mitigation measure, the proposed development will have the following residual impact on archaeological and architectural resources in the study area.

- There will be a **temporary, reversible, imperceptible visual effect** on the archaeological and architectural resource during the construction phase of the proposed development.
- There will be a **long-term, reversible, imperceptible visual effect** on archaeological and architectural resources in the study area during the operational phase of the proposed development.

15. LANDSCAPE AND VISUAL IMPACTS

15.1 Introduction

This section describes the existing landscape, the visual character of the existing facility and the potential visual impact of the proposed development on the surrounding area. Photomontages were prepared by Macroworks, and these are provided with this application.

15.2 Baseline Environment

At approximately 70m above ordnance datum, the application site is located in a low lying area and slopes gently to the south. The landform in the immediate vicinity rises gently from the application site to the north and south. There is a locally elevated area in the south of the application site that reaches approximately 90m above ordnance datum.

The southern portion of application site currently consist of disused grassland / scrubland, while the northern portion contains an existing waste management facility, which is partially bordered by landscape screening along its northern and western perimeter. Lands to the south and west of the application site are predominantly utilised for agricultural purposes. Approximately 250m to the north and 300m to the northwest of the application site are the Keypoint Business Park and the Premier Business Park respectively. The northern and eastern extents of the study area are dominated by a variety of business and enterprise parks.

The western, south-eastern and south western portions of the study area are occupied by built-up urban areas composed of a high proportion of residential dwellings. The nearest dwellings are located immediately to the west of the site.

Separated by a mature belt of vegetation, the M50 is a 6 carriageway motorway immediately to the south of the application site and is the busiest road in the country. The R843 and the R102 regional roads are located to the northwest and southwest respectively. The N3 national primary road intersects with the M50 in the southwestern portion of the study area.

Of the 6 Landscape Character Types identified within the Fingal County Development Plan, the site is located where the eastern portion of the ‘River Valleys & Canal’ Landscape Character Type interfaces with the southwestern portion of the ‘Low Lying Agricultural’ Landscape Character Type. The River Valleys & Canal Character Type is identified, in general, as having a ‘High Sensitivity’ to development and a ‘High Landscape Value’.

15.3 Potential Impacts

15.3.1 Landscape Impacts

There is potential for construction phase works to temporarily impact on landscape character. This will result from the movement of heavy machinery, excavation and stockpiling of material as well as the temporary storage of construction materials in the immediate vicinity of the Applicant’s existing waste management facility.

The greatest adverse effects will occur close to the end of the construction phase when the proposed buildings and structures are nearing completion, but there is still ongoing construction-related activity. However, these activities and the new buildings will be visually contained in a low-lying area and will not be prominent in the landscape.

The construction phase of the proposed development will have a Moderate impact on landscape character in the immediate vicinity of the application site and a Slight or Imperceptible impact within the wider landscape.

From a landscape character perspective, the proposed development will add to the overall intensity and scale of the Applicant's existing waste management facility, but only to a limited extent and will not markedly alter the wider landscape setting, which is already notably influenced by industrial facilities and warehouses in the nearby business parks.

The operational phase of the proposed development will have a Medium-Low impact on the landscape character of the immediate vicinity of the site.

15.3.2 Visual Impacts

To assess the visual impacts of the proposed development, photomontages showing the proposed development once constructed from a number of visual receptors were developed.

A summary of the impact the proposed development will have on these visual receptors is presented in Table 15-1.

A map showing the location of the visual receptors considered is then presented in Figure 15-1:

Table 15-1: Visual Impact Assessment Summary

VP No.	Title and description of existing view	Receptor Sensitivity	Residual Significance / Quality / Duration of Visual Impact
VP1	L3080 Ballycoolin Road, Cappogue	Low	Slight-imperceptible/ Negative/ Long term
VP2	Barnlodge Grove, Cappogue	Medium-low	Moderate-slight/ Negative/ Long term
VP3	Premier Business Park, Cappogue	Low	Slight-imperceptible/ Negative/ Long term
VP4	Barnlodge Grove, Dunsink	Medium-low	Moderate-slight/ Negative/ Long term

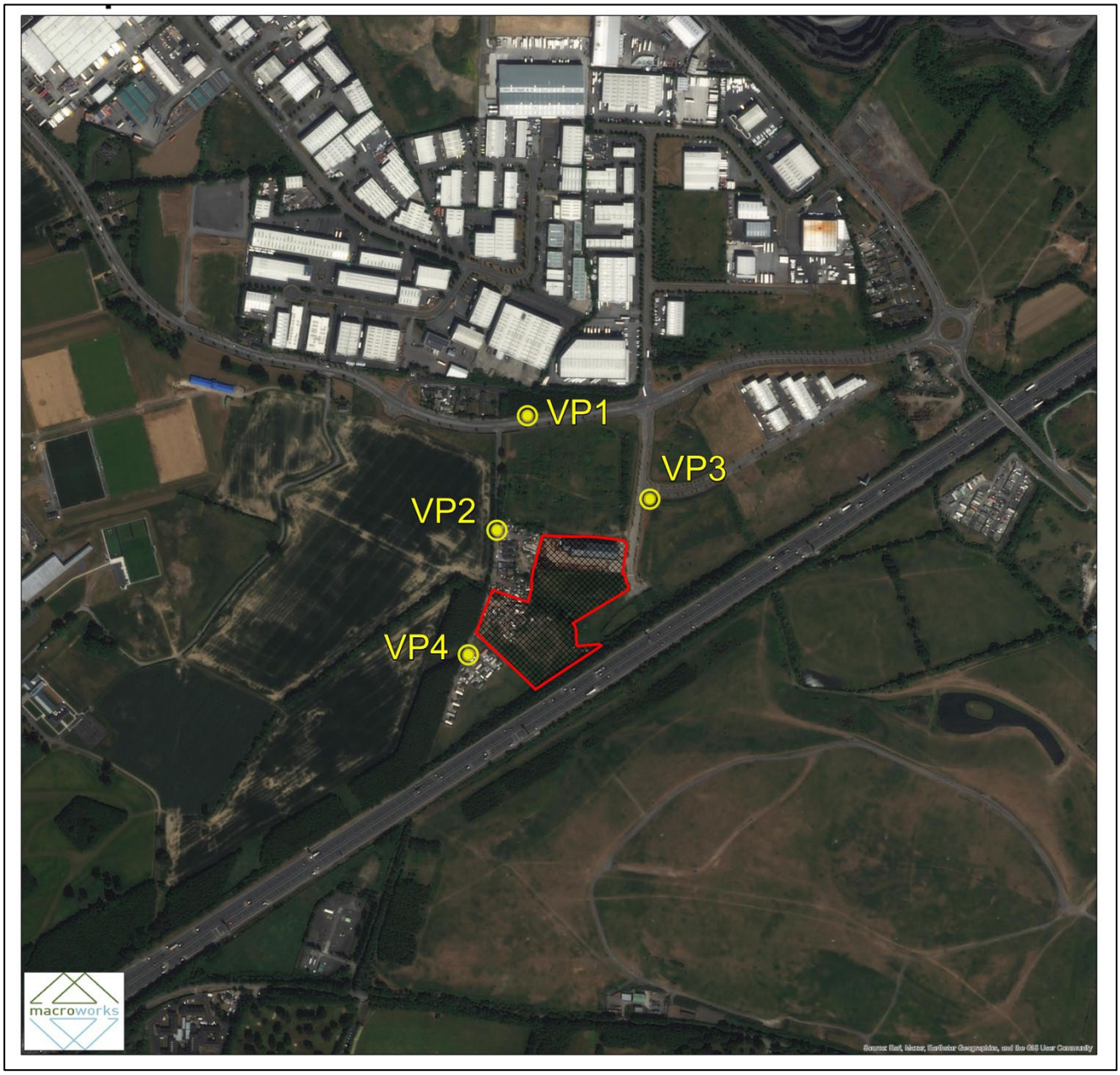

Figure 15-1: Viewpoint Map

The main aspect of cumulative impact relates to the in-combination landscape and visual effects of the proposed development with elements of the existing waste management facility. In that regard, the above impact assessment incorporates any likely cumulative effects as an integral aspect of the assessment. There will be a noticeable increase in the extent and intensity of built infrastructure within the immediate context of the proposed development and the existing waste management facility. The character of the landscape in the immediate area is already influenced by the existing facility so the contribution to cumulative landscape character effects from the proposed development is relatively modest. It is not considered that there will be any significant landscape or visual cumulative impacts arising as a result of the proposed development.

15.4 Mitigation Measures

Apart from the typical construction hoarding which will help screen views of construction activities at ground level within the application site, there are no specific landscape and visual mitigation measures deemed necessary / proposed during the temporary construction phase.

There are no specific landscape and visual mitigation measures deemed necessary during the operational phase. However, it is noted that the eastern, western and southern perimeter of the application site boundary will be planted with a native screening hedgerow mix (651 m in linear length), and this has been depicted in 'Mitigation Established' photomontages and assessed as part of the visual impact assessment. Details of the landscaping measures are indicated on Drawing No. LD-THRNTNS-1-0 Landscape Masterplan contained in Appendix 15.2 of Volume 3 of this EIAR. The planting will be allowed to grow to maturity (height of 6 – 8 m) and whilst this is not high enough to completely screen the proposed development, it will work to soften its appearance and help to anchor the development into this landscape setting. This native planting will also serve to help offset the loss of scrubland associated with the proposed development. Furthermore, a light grey tone is used for the proposed buildings because they are most likely to be viewed against a backdrop of sky and the intention is to reduce the degree of visual contrast.

15.5 Residual Impacts

The construction and operational phases of the proposed development will not have a 'substantial' or 'significant' negative impact on landscape character or visual amenity. The proposed development will not significantly alter landscape character or amenity by its character, or magnitude, having regard to the baseline environment in which the proposed development is located.

16. INTER-RELATIONSHIPS AND INTERACTIONS

This chapter has been developed to identify potential interrelationships and interactions between environmental aspects addressed in this EIAR i.e., interactions between one environmental aspect and another environmental aspect which can result in an environmental impact. The previous chapters have described the potential impact of the proposed development under a variety of different topic headings. The purpose of this chapter is to take a more holistic view of the inter-relations and interactions between different aspects of the project and topics discussed in other chapters. This ensures that there is adequate coverage in this EIAR of the potential for the development to cause overall effects and cumulative impacts.

A summary of potentially significant interactions is presented below:

- Potential, accidental, aqueous emissions from the proposed development (e.g., 'dirty' water discharges, release of fuels or oils) may negatively impact receiving grounds and groundwaters. This may affect the quality status of affected ground and groundwater which in turn can affect the health of humans who source their drinking water from potentially affected groundwaters.
- Potential, accidental, aqueous emissions from the proposed development (e.g., 'dirty' water discharges, release of fuels or oils) may negatively impact the receiving surface water environment. Such impacts may negatively affect the quality status of the receiving waters downstream, which in turn may negatively impact upon the recreation and amenity value attained by humans who use downstream surface waters.
- Dust, odour and climate impacts associated with the construction and operational phases of the proposed development may have a negative impact on human receptors.
- Noise generation during the construction and operational phases of the proposed development has the potential to negatively impact upon sensitive human receptors.
- The proposed development will generate traffic during both the construction and operational phases of the proposed development. Increased traffic movements have the potential to; impact on the structural integrity of the road, cause increased congestion, present increased health and safety risks (associated with road traffic accidents) and generate excessive noise at sensitive human receptors.
- Groundworks undertaken during the construction phase of the proposed development have the potential to have negative effect on any previously unrecorded archaeological remains that may exist within the development site.
- Environmental pathways exist between land, groundwater and surface water. Pollution affecting one medium at or around the proposed development site has the potential to disperse or migrate to another.

In summary, it has been determined that there will be no significant, negative, residual environmental impacts associated with impact interactions due to the proposed development with the adoption of the various mitigation measures proposed. The reader is asked to refer to Chapter 17 – Schedule of Commitments, of Volume 2 of this EIAR which presents proposed environmental mitigation measures in full.

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