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## PROPOSED LARGE-SCALE RESIDENTIAL DEVELOPMENT RATHMULLAN ROAD, OLDBRIDGE, DROGHEDA, CO. MEATH

# EIAR Volume 2

## Earlsfort Developments Drogheda Limited

**Report no.:** 01, Rev. 01
**Document no.:** 01
**Date:** 04/09/2025



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# 1 INTRODUCTION AND METHODOLOGY

## 1.1 Introduction

This Environmental Impact Assessment Report (EIAR) has been prepared Synergy Environmental Limited T/A DNV (hereafter referred to as 'DNV') on behalf of Earlsfort Developments Drogheda Limited, here in after referred to as 'the Applicant', who is seeking planning permission for a mixed-use Large Scale Residential development of 249 residential units on a 9.20 ha site at Rathmullan Road, Oldbridge, Drogheda, Co. Meath.

A full description of the Proposed Development is provided in Chapter 2 of this EIAR.

This EIAR presents the environmental impact assessment (EIA) process which has been undertaken in accordance with the Planning and Development Act 2000, as amended, the Planning and Development Regulations 2001 (as amended), the Planning and Development (Housing) and Residential Tenancies Act 2016 as amended, and the Environmental Impact Assessment Directive 2011/92/EU, as amended by Directive 2014/52/EU.

EIA is a process of identifying and evaluating the likely environmental, social and economic effects of a proposed development project, taking into account both adverse and beneficial effects. EIA also involves finding ways and means to reduce adverse effects and enhance beneficial effects. It ensures that planning decisions are made, taking into account the environmental effects and with engagement from stakeholders has been compiled in accordance with all current legislation and best practice guidance.

This chapter describes the methodology by which the EIA was carried out and the EIAR was completed. The methodology used is broadly consistent across all chapters to ensure the EIAR is clear to navigate for the reader.

## 1.2 Quality Assurance and Competency of Experts

Under Article 5(3)(a) of Directive 2014/52/EU it is a requirement that:

> *"the developer shall ensure that the environmental impact assessment report is prepared by competent experts"*

This EIAR has been prepared by DNV, supported by sub-consultants on certain specialist assessments (see Table 1-1), taking into account current knowledge and methods of assessment.

DNV's Biodiversity and Environmental Services (BES) Team was originally Enviroguide, founded in 2010, an Irish multi-disciplinary environmental consultancy, providing technical expertise and strategic advice to clients in the land development, renewable energy, pharmaceutical, waste, waste management processing, telecommunications, manufacturing, legal and public sectors. Enviroguide was acquired by DNV in July 2023. DNV is an independent expert in risk management and assurance, operating in more than 100 countries.

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Through its broad experience and deep expertise DNV advances safety and sustainable performance, sets industry benchmarks, and inspires solutions.

DNV consultants hold scientific, engineering, and/or legal qualifications with extensive technical knowledge and extensive practical experience within the environmental consultancy and management sectors. Professional memberships include the Chartered Institute of Ecology and Environmental Management, the Chartered Institution of Wastes Management (CIWM), the Irish Environmental Law Association, the Institute of Environmental Management and Assessment (IEMA), Engineers Ireland, the Institute of Geologists of Ireland, and the Royal Town Planning Institute.

This chapter has been prepared by Michelle Gaffney, Senior EIA consultant with DNV, with over four years' experience in environmental consultancy. Michelle holds a B.A (Hons) in Earth Science from Trinity College and is currently advancing expertise through an MSc in Environmental Sustainability at University College Dublin. Michelle has been involved in the technical input into a range of Environmental Impact Assessment Report Chapters and has been involved in the project management and delivery of a range of chapters for EIARs of a similar scale and nature to the Proposed Development.

This chapter was reviewed by Grainne Ryan, Principal EIA Consultant at DNV. Gráinne is a Principal Environmental Consultant with 11 years' experience, specialising in EIAs for strategic infrastructure, renewable energy, residential, industrial and pharmaceutical projects. Gráinne has a B.A, in Geography, Planning and Environmental Policy, an MSc in Environmental Policy and a Post Graduate Diploma in Project Management.

This chapter has been approved by Catherine Keogan, Technical Director and EIA Lead at DNV. Catherine is an environmental consultant with 37 years' experience in consultancy, specialising in EIAs for large-scale residential, commercial developments, pharmaceutical, BESS and solar projects working closely with a range of developers, planning consultants and architects within the public and private sector. Catherine has a B.Sc. (Hons) in Analytical Science and a Post Graduate Diploma in Renewable Energy Technology Systems.

For each chapter of this EIAR, the author, along with their qualifications and relevant experience on other development projects, is detailed in the 'Quality Assurance' section at the beginning of each chapter. The EIAR Project Team are identified in Table 1-1.

*Table 1-1 EIAR Project Team*

| No. | Chapter | Consultant Name and address | Specialist Area |
|---|---|---|---|
| 1 | **Introduction and Methodology** | DNV, 3D Core C, The Plaza, Park West, D12F9T<br><br>Michelle Gaffney | Multidisciplinary Planning and Environmental Consultants |
| 2 | **Description of the Proposed Development and Assessment of Alternatives** | DNV, 3D Core C, The Plaza, Park West, D12F9T<br>Michelle Gaffney | Multidisciplinary Planning and Environmental Consultants |
| 3 | **Planning and Development Context** | DNV, 3D Core C, The Plaza, Park West, D12F9TN | Multidisciplinary Planning and Environmental Consultants |

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| No. | Chapter | Consultant Name and address | Specialist Area |
|---|---|---|---|
| | | Rachel Redmond | |
| **4** | **Population and Human Health** | DNV, 3D Core C, The Plaza, Park West, D12F9TN<br><br>Rachel Redmond | Multidisciplinary Planning and Environmental Consultants |
| **5** | **Biodiversity** | Verdé Environmental Consultants E7 Network Enterprise Park, Kilcoole, Co. Wicklow, A63 KV04<br><br>Jeff Hean<br>Megan Tallon | Ecological Consultancy |
| **6** | **Land and Soils** | DNV, 3D Core C, The Plaza, Park West, D12F9TN<br><br>Nuria Manzanas<br>Gareth Carroll | Multidisciplinary Planning and Environmental Consultants |
| 7 | **Hydrology and Hydrogeology** | DNV, 3D Core C, The Plaza, Park West, D12F9TN<br><br>Nuria Manzanas<br>Gareth Carroll | |
| **8** | **Air Quality** | DNV, 3D Core C, The Plaza, Park West, D12F9TN<br><br>Laura Griffin | Multidisciplinary Planning and Environmental Consultants |
| **9** | **Climate** | DNV, 3D Core C, The Plaza, Park West, D12F9TN<br><br>Aoife Gillen | Multidisciplinary Planning and Environmental Consultants |
| **10** | **Noise and Vibration** | Wave Dynamics, Unit 202, Nesta Business Centre, Old Airport Rd, Santry, Dublin, D09 HP96<br><br>Shannon Doherty | Acoustic Consultancy Services |
| 11 | **Landscape and Visual Impact** | Cunnane Stratton Reynolds Land Planning and Design Gainsboro House, 24 Suffolk Street, Dublin 2<br><br>Ronan Finnegan | Landscape Design and Planning consultancy, |
| 12 | **Archaeology and Cultural Heritage** | Archaeology and Heritage Consultancy ltd, 36 Ballywillwill Road, Castlewellan, BT31, 9LF, GB<br><br>Eoin Halpin | Archaeology and Heritage Consultancy |
| 13 | **Material Assets - Traffic and Transport** | Waterman-Moylan Consulting Engineers Limited | Engineering and environmental consultancy |

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| No. | Chapter | Consultant Name and address | Specialist Area |
|---|---|---|---|
| | | Block S, East Point Business Park, Alfie Byrne Road, Dublin D03 H3F<br><br>Fernando J. De Maio | |
| 14 | **Material Assets – Waste and Utilities** | DNV, 3D Core C, The Plaza, Park West, D12F9TN<br><br>Laura Griffin | Multidisciplinary Planning and Environmental Consultants |
| 15 | **Risk Management** | DNV, 3D Core C, The Plaza, Park West, D12F9TN<br><br>Lakshmi Priya Mohan | Multi-disciplinary environmental, planning and heritage resource management consultancy |
| 16 | **Interactions** | DNV, 3D Core C, The Plaza, Park West, D12F9TN<br><br>Darragh Grant | Multidisciplinary Planning and Environmental Consultants |
| 17 | **Mitigation and Monitoring** | DNV, 3D Core C, The Plaza, Park West, D12F9TN<br><br>Aisling Jones | Multidisciplinary Planning and Environmental Consultants |
| NTS | Non-Technical Summary | Input from all above consultants and compiled by DNV | Multidisciplinary Planning and Environmental Consultants |
| App | Appendices | | |

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## 1.3 Purpose of the Environmental Impact Assessment and the Environmental Impact Assessment Report

EIA is a systematic examination of the potential impacts of a proposed development on the environment. In assessing the environmental impacts, this EIAR will review the baseline conditions, describe the Proposed Development and identify the potential for likely significant environmental effects during construction and operation.

Where likely significant adverse effects are identified, proposed mitigation measures will be presented to avoid, manage and minimise such effects.

Under Schedule 5 of the Planning and Development Regulations 2001, as amended (the Planning Regulations), an EIAR is required to accompany planning applications for specified projects as part of the EIA process.

The EIAR describes the outcomes of the iterative EIA process which was progressed in parallel with the project design process. In doing so, it forms the first part of the EIA process that will be completed by Meath County Council (MCC), as the competent authority, which in turn will be required to examine, analyse and evaluate the direct and indirect effects of the development on the various factors listed in Directive 2011/92/EU, as amended by 2014/52/EU (the EIA Directive).

Where likely significant environmental effects are identified that are unacceptable, the EIA process aims to quantify and minimise the effects of the impact that the specified development

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has on the environment through appropriate mitigation measures and where necessary, subsequent monitoring. This process is illustrated in Figure 1-1.

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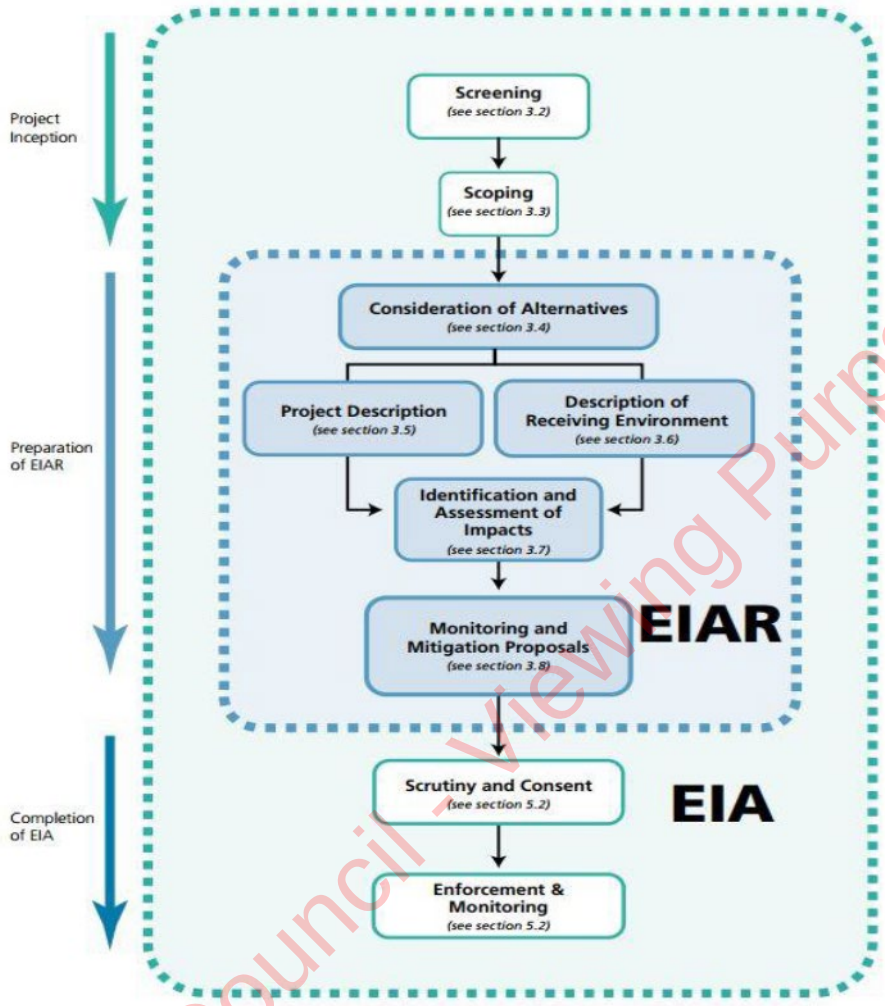



*Figure 1-1 EIA Process*

The purpose of the EIAR is to provide the relevant competent authority with information on the likely and significant effects on the environment by the Proposed Development. This EIAR was prepared in parallel with the project design process and reflects the potential cumulative effect of other developments.

## 1.4 EIA Legislation

The EIA Directive requires EIA to be carried out for certain projects as listed in Annex I of the Directive. The EIA Directive is transposed into Irish law through the Planning and Development Act 2000, as amended, and the Planning and Development Regulations 2001, as amended.

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## 1.5 EIA Guidance Used

This EIAR has been prepared in accordance with all relevant guidance. Topic specific methodology guidance will be set out in the topic chapters. The following general guidance has been used to inform the approach to EIA and present the EIAR chapters.

- Guidelines on the Information to be Contained in Environmental Impact Assessment Reports (EPA May 2022);
- Environmental Assessments of Plans, Programmes and Projects – Rulings of the Court of Justice of the European Union (European Union 2020);
- Environmental Impact Assessment of Projects – Guidance on Scoping (Directive 2011/92/EU as amended by 2014/52/EU) (European Union 2017);
- Guidance of Integrating Climate Change and Biodiversity into Environmental Impact Assessment (European Union 2013);
- Environmental Impact Assessment of Projects – Guidance on the preparation of the Environmental Impact Assessment Report (European Union 2017);
- European Commission 2017. Environmental Impact Assessment of Projects Guidance on Screening (Directive 2011/92/EU as amended by 2014/52/EU);
- EU Commission Guidance on Interpretation of definitions of project categories of annex I and II of the EIA Directive (2015);
- Guidelines for Planning Authorities and An Bord Pleanála on carrying out Environmental Impact Assessment (Government of Ireland 2018);
- Key Issues Consultation Paper on the Transposition of 2014 EIA Directive (2014/52/EU) in the Land Use Planning and EPA Licencing Systems; (Department of Housing, Planning, Community and Local Government 2017);
- Guidelines for the Assessment of Indirect and Cumulative Impacts as well as Impact Interactions (European Communities 1999);
- Circular PL 05/2018 -Transposition into Planning Law of Directive 2014/52/EU amending Directive 2011/92/EU on the effects of certain public and private projects on the environment (the EIA Directive) (Department of Housing, Planning and Local Government, 2018; and
- Revised Guidelines for Planning Authorities and An Bord Pleanála on carrying out Environmental Impact Assessment (Department of Housing, Planning and Local Government 2018);
- Implementation of Directive 2001/42/EC on the assessment of the effects of certain plans and programmes on the environment (European Communities 2003); and
- Office of the Planning Regulator (OPR) Environmental Impact Assessment Screening Practice Note (2021).

The EIA Directive defines EIA as a process whereby Article 1(2)(g) states that EIA means:

> "(*i) the preparation of an environmental impact assessment report by the developer, as referred to in Article 5(1) and (2);*
>
> *(ii) the carrying out of consultations as referred to in Article 6 and, where relevant, Article 7;*

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*(iii) the examination by the competent authority of the information presented in the environmental impact assessment report and any supplementary information provided, where necessary, by the developer in accordance with Article 5(3), and any relevant information received through the consultations under Articles 6 and 7;*

*(iv) the reasoned conclusion by the competent authority on the significant effects of the project on the environment, taking into account the results of the examination referred to in point (iii);*

*(iii) and, where appropriate, its own supplementary examination; and*

*(v) the integration of the competent authority's reasoned conclusion into any of the decisions referred to in Article 8a".*

The EIA Directive requires the EIAR to identify, describe and assess, in an appropriate manner and in light of each individual case, the direct, indirect and cumulative significant effects of the Proposed Development on factors of the environment including:

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 (respectively, the Habitats Directive and the Birds Directive)

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).

## 1.6 The Need for an EIA

Annex 1 of the EIA Directive requires as mandatory an EIA for all development projects listed therein. Schedule 5, Part 1, of the Planning Regulations transposes Annex 1 of the EIA Directive directly into Irish planning legislation. An EIAR is required to accompany a planning application for development of a class set out in Schedule 5, Part 1 of the Planning Regulations which exceeds a limit, quantity or threshold set for that class of development. The Proposed Development is not considered to fall under any class set out in Schedule 5, Part 1 of the Planning Regulations.

Schedule 5, Part 2 of the Planning and Development Regulations 2001 as amended, defines projects that are assessed on the basis of set mandatory thresholds for each of the project classes including:

***10. Infrastructure projects***

***10. (b)(i) Construction of more than 500 dwelling units.***

It is proposed to construct 249 residential units as part of the Proposed Development.

This is below the stated threshold of 500 dwellings. Therefore, the Proposed Development is sub-threshold for Part 2, Section 10 (b)(i) and is not subject to a mandatory EIA.

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***10. (b)(ii) Construction of a car-park providing more than 400 spaces, other than a car-park provided as part of, and incidental to the primary purpose of, a development.***

It is proposed to provide 396 car parking spaces for the Proposed Development. Car parking is ancillary to the Proposed Development.

This is below the stated threshold of 400 spaces, and is ancillary to the development.

Therefore, the Proposed Development is sub-threshold for Part 2, Section 10 (b)(ii) and is not subject to a mandatory EIA.

***10(b)(iv) Urban development which would involve an area greater than 2 hectares in the case of a business district, 10 hectares in the case of other parts of a built-up area and 20 hectares elsewhere.***

***(In this paragraph, "business district" means a district within a city or town in which the predominant land use is retail or commercial use.)***

The Proposed Development site is located to the south of the River Boyne and is bounded to the east by existing residential developments, and to the west and south, by lands subject to a strategic reserve of zoned lands which are not, at present, available for residential development. Therefore, the applicable threshold is 10 hectares.

The size of the Proposed Development is 9.20 hectares, which falls below the 10-hectare threshold. Therefore, the Proposed Development is sub-threshold with regard to Part 2, Section 10 (b)(iv) and is not subject to a mandatory EIA.

***15. Any project listed in this Part which does not exceed a quantity, area or other limit specified in this Part in respect of the relevant class of development, but which would be likely to have significant effects on the environment, having regard to the criteria set out in Schedule 7.***

Schedule 7 of the Planning and Development Regulations 2001 (as amended) sets out the criteria for determining whether Developments listed in part 2 of Schedule 5 should be subject to an EIA. These include the following:

1. **Characteristics of Proposed Development**

The characteristics of the Proposed Development, in particular:

(a) the size of the whole Proposed Development;
(b) cumulation with other existing development and/or development the subject of a consent for Proposed Development for the purposes of section 172(1A)(b) of the Act and/or development the subject of any development consent for the purposes of the Environmental Impact Assessment Directive by or under any other enactment;
(c) the nature of any associated demolition works;
(d) the use of natural resources, in particular land, soil, water and biodiversity;
(e) the production of waste;
(f) pollution and nuisances;

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(g) the risk of major accidents, and/or disasters which are relevant to the project concerned, including those caused by climate change, in accordance with scientific knowledge, and;
(h) the risks to human health (for example, due to water contamination or air pollution).

## 2. Location of Proposed Development

The environmental sensitivity of geographical areas likely to be affected by the Proposed Development, having regard in particular to:

(a) the existing and approved land use;
(b) the relative abundance, availability, quality and regenerative capacity of natural resources (including soil, land, water and biodiversity) in the area and its underground;
(c) the absorption capacity of the natural environment, paying attention to the following areas:
(i) wetlands, riparian areas, river mouths;
(ii) coastal zones and the marine environment;
(iii) mountain and forest areas;
(iv) nature reserves and parks;
(v) areas classified or protected under national legislation; Natura 2000 areas designated by Member States pursuant to Directive 92/43/EEC and Directive 2009/147/EC;
(vi) areas in which there has already been a failure to meet the environmental quality standards, laid down in Union legislation and relevant to the project, or in which it is considered that there is such a failure;
(vii) densely populated areas; and
(viii) landscapes and sites of historical, cultural or archaeological significance.

## 3. Types and characteristics of potential impacts

The likely significant effects of projects on the environment must be considered in relation to criteria set out in points 1 and 2 of this Annex, with regard to the impact of the project on the factors specified in Article 3(1), taking into account:
(a) the magnitude and special extent of the impact (for example geographical area and size of the population likely to be affected);
(b) the nature of the impact;
(c) the transboundary nature of the impact;
(d) the intensity and complexity of the impact;
(e) the probability of the impact;
(f) the expected onset, duration, frequency and reversibility of the impact;
(g) the cumulation of the impact with the impact of other existing and/or development the subject of a consent for proposed development for the purposes of section 172(1A)(b) of the Act and/or development the subject of any development consent for the purposes of the Environmental Impact Assessment Directive by or under any other enactment, and;
(h) the possibility of effectively reducing the impact.

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The Proposed Development falls below the thresholds set out in Class 10 of Part 2 of Schedule 5 of the Planning and Development Regulations 2001 (as amended) and is therefore considered a sub-threshold development for the purposes EIA.

In accordance with Section 172 of the Planning and Development Act 2000 (as amended) and having regard to Schedule 7, the nature and location of the Proposed Development, together with the environmental sensitivity of the site, it was nevertheless deemed appropriate to prepare and EIAR to support the planning application.

Additionally, Article 299A of the Planning and Development Regulations 2001 (as amended) notes that 'Where a planning application for a sub-threshold development is accompanied by an EIAR and a request for a determination under section 7(1)(a)(i)(I) of the Planning and Development (Housing) and Residential Tenancies Act 2016 was not made, the application shall be dealt with as if the EIAR had been submitted in accordance with section 172(1) of the Act'. Section 7 of the 2016 Act will be repealed upon the commencement of section 17(6) of the Planning and Development (Amendment) (Large-scale Residential Development) Act 2021. As of the date of this EIAR, however, section 17(6) has not yet been commenced.

## 1.7 Scope of the EIAR

'Scoping' is a process of deciding what information should be contained in an EIAR and what methods should be used to gather and assess that information. It is defined in EC Guidance on EIA Scoping 2001 as:

*"Determining the content and extent of the matters which should be covered in the environmental information to be submitted in the EIAR".*

Section 7(1)(b) of the Planning and Development (Housing) and Residential Tenancies Act 2016 (as amended) states that a request for scoping may be submitted to An Bord Pleanála, however this is not mandatory. Article 5(2) of the 2014 Directive states that European Member States may decide that competent authorities should give a scoping opinion mandatorily, notwithstanding whether or not the developer requests. However, the transposition of this provision is optional and the consultation paper from the Department indicates that it is not intended to introduce mandatory scoping.

The content of this EIAR was informed by a scoping process carried out by the Applicant, design team and EIAR consultants to identify the core issues likely to be most important during the EIA process.

The scope of this EIAR has had regard to the documents listed in Section 1.5 together with:

- The requirements of Part X of the Planning Act and Part 10 of the Planning Regulations.
- The requirements of the Meath County Council Development Plan 2021-2027.
- The requirements of Louth County Council Development Plan 2021-2027
- The EIA Directive 2011/92/EU, as amended by Directive 2014/52/EU
- Relevant Regional and National Planning Policy Documents.

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- The receiving environment and any vulnerable or sensitive local features and current uses.
- Previous relevant planning history and applications that have been submitted on the subject and adjoining lands.
- The likely and significant effects of the Proposed Development on the environment; and
- Available mitigation measures for reducing or eliminating any potentially significant undesirable effects.

In addition, the individual chapters of this EIAR should be referred to for further information on the documents consulted by each individual specialist consultant. These include supporting technical reports prepared by relevant experts, such as engineering assessments, flood risk assessments, traffic studies, and other specialist inputs that have informed the EIAR chapters.

The EIAR prepared for the Proposed Development has endeavoured to be as thorough as possible and therefore all the issues listed in Schedule 6, Sections 1 and 2 of the Planning and Development Regulations have been addressed in the EIAR.

## 1.8 Purpose and Objective of the EIAR

The purpose of this EIAR is to assist in the EIA process, by identifying likely significant environmental effects resulting from the Proposed Development, to describe the means and extent by which they can be reduced or mitigated, to interpret and communicate information about the likely effects and to provide an input into the decision making and planning process.

The fundamental principles to be followed when preparing an EIAR are:

- Anticipating, avoiding and reducing significant effects.
- Assessing and pursuing preventative action.
- Maintaining objectivity.
- Ensuring clarity and quality.
- Providing relevant information to decision makers; and
- Facilitating public and stakeholder consultation.

EIA is an iterative process. The EIAR captures this assessment process and describes its outcomes. The EIAR documents the consideration of environmental effects and provides transparent, objective and replicable documentary evidence of the EIA evaluation and decision-making processes. The EIAR provides information on any identified effects arising as a consequence of the Proposed Development and which:

- Are environmentally based.
- Are likely to occur; and
- Have significant and adverse effects on the environment.

The EIAR also documents how the design of the Proposed Development incorporates measures for the purposes of impact avoidance, reduction or amelioration; as well as to explain how significant adverse effects will be avoided.

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The key objective of this EIAR is to inform the relevant competent authority on the acceptability of the Proposed Development, in carrying out an EIA, in order to reach a decision in the full knowledge of the Proposed Development's likely significant effects on the environment, if any.

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## 1.9 Format and Structure of this EIAR

The formation of an EIAR necessitates the co-ordination and collation of associated, yet diverse specialised areas of assessment. The EIA approach involves the examination of each environmental factor, describing the existing baseline environment, the Proposed Development, its likely impacts and direct and indirect significant effects pertaining to that environmental factor and mitigation measures, where appropriate. The assessment also considers cumulative effects.

Each technical assessment sets out the relevant legislation, policy, and guidance together with the methodology used to carry out the assessment of potential effects, including the criteria that are used to establish which effects are significant. The significance criteria follow that as defined in the EPA 'Guidelines on the Information to be Contained in Environmental Impact Assessment Reports' 2022[1] as shown in Table 1-2 below.

*Table 1-2 Description of Effects*

| Category | Type and Description |
|---|---|
| **Quality of Effects**<br>It is important to inform the non-specialist reader whether an effect is positive, negative or neutral. | **Positive Effects**<br>A change which improves the quality of the environment (for example, by increasing species diversity, or improving the reproductive capacity of an ecosystem, or by removing nuisances or improving amenities). |
| | **Neutral Effects**<br>No effects or effects that are imperceptible, within normal bounds of variation or within the margin of forecasting error. |
| | **Negative/Adverse Effects**<br>A change which reduces the quality of the environment (for example, lessening species diversity or diminishing the reproductive capacity of an ecosystem, or damaging health or property or by causing nuisance) |
| **Describing the Significance of Effects**<br>'*Significance*' is a concept that can have different meanings for different topics – in the absence of specific definitions for | **Imperceptible**<br>An effect capable of measurement but without significant consequences. |

[1] https://www.epa.ie/publications/monitoring--assessment/assessment/EIAR_Guidelines_2022_Web.pdf

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| Category | Type and Description |
|---|---|
| different topics the following definitions may be useful *(also see Determining Significance)*. | **Not Significant**<br>An effect which causes noticeable changes in the character of the environment but without significant consequences. |
| | **Slight Effects**<br>An effect which causes noticeable changes in the character of the environment without affecting its sensitivities. |
| | **Moderate Effects**<br>An effect that alters the character of the environment in a manner that is consistent with existing and emerging baseline trends. |
| | **Significant Effects**<br>An effect which, by its character, magnitude, duration or intensity, alters a sensitive aspect of the environment. |
| | **Very Significant**<br>An effect which, by its character, magnitude, duration or intensity significantly alters most of a sensitive aspect of the environment. |
| | **Profound Effects**<br>An effect which obliterates sensitive characteristics. |
| **Describing the Extent and Context of Effects**<br><br>Context can affect the perception of significance. It is important to establish if the effect is unique or, perhaps, commonly or increasingly experienced. | **Extent**<br>Describe the size of the area, the number of sites and the proportion of a population affected by an effect. |
| | **Context**<br>Describe whether the extent, duration or frequency will conform or contrast with established (baseline) conditions. |
| | **Likely Effects**<br>The effects that can reasonably be expected to occur because of the planned project if all mitigation measures are properly implemented. |
| | **Unlikely Effects**<br>The effects that can reasonably be expected not to occur because of the planned project if all mitigation measures are properly implemented. |

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| Category | Type and Description |
|---|---|
| **Describing the Probability of Effects**<br><br>Descriptions of effects should establish how likely it is that the predicted effects will occur so that the CA can take a view of the balance of risk over advantage when making a decision. | **Likely Effects**<br>The effects that can reasonably be expected to occur because of the planned project if all mitigation measures are properly implemented. |
| | **Unlikely Effects**<br>The effects that can reasonably be expected not to occur because of the planned project if all mitigation measures are properly implemented. |
| **Describing the Duration and Frequency of Effects**<br><br>*'Duration'* is a concept that can have different meanings for different topics – in the absence of specific definitions for different topics the following definitions may be useful. | **Momentary Effects**<br>Effects lasting from seconds to minutes. |
| | **Brief Effects**<br>Effects lasting less than a day. |
| | **Temporary Effects**<br>Effects lasting less than a year. |
| | **Short-term Effects**<br>Effects lasting one to seven years. |
| | **Medium-term Effects**<br>Effects lasting seven to fifteen years. |
| | **Long-term Effects**<br>Effects lasting fifteen to sixty years. |
| | **Permanent Effects**<br>Effects lasting over sixty years. |
| | **Reversible Effects**<br>Effects that can be undone, for example through remediation or restoration. |
| | **Frequency of Effects**<br>Describe how often the effect will occur (once, rarely, occasionally, frequently, constantly – or hourly, daily, weekly, monthly, annually). |
| **Describing the Types of Effects** | **Indirect Effects (a.k.a. Secondary or Off-site Effects)**<br>Effects on the environment, which are not a direct result of the project, often produced away from the project site or because of a complex pathway. |
| | **Cumulative Effects**<br>The addition of many minor or insignificant effects, including effects of other projects, to create larger, more significant effects. |
| | **'Do-nothing Effects'**<br>The environment as it would be in the future should the subject project not be carried out. |
| | **'Worst-case' Effects** |

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| Category | Type and Description |
|---|---|
| | The effects arising from a project in the case where mitigation measures substantially fail. |
| | **Indeterminable Effects**<br>When the full consequences of a change in the environment cannot be described. |
| | **Irreversible Effects**<br>When the character, distinctiveness, diversity or reproductive capacity of an environment is permanently lost. |
| | **Residual Effects**<br>The degree of environmental change that will occur after the proposed mitigation measures have taken effect. |
| | **Synergistic Effects**<br>Where the resultant effect is of greater significance than the sum of its constituents (e.g. combination of SOx and NOx to produce smog) |

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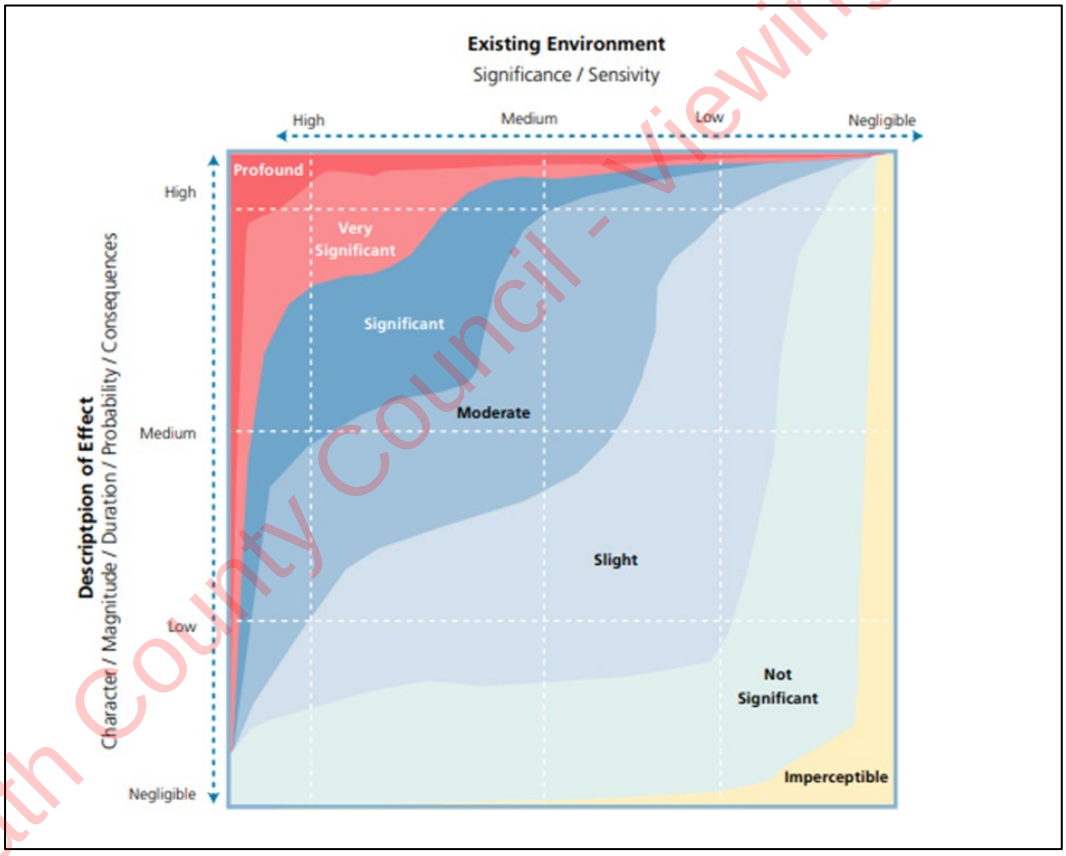



*Figure 1-2 :Determining the Significance of the Effect (EPA 2022)*

The topics examined in this EIAR are categorised under the environmental factors prescribed under the EIA Directive:

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- Population and Human Health;
- Biodiversity;
- Land and Soils;
- Hydrology and Hydrogeology;
- Air Quality;
- Climate;
- Noise and Vibration;
- Material Assets (Traffic, Utilities and Waste Management);
- Cultural Heritage (Archaeology and Built Heritage);
- Landscape and Visual;
- Risk Management;
- Interactions; and
- Mitigation and Monitoring.

The potential likely significant effects caused by the vulnerability of the Proposed Development to risks of major accidents and/or disasters must also be examined.

The structure of the EIAR is set out in Table 1-3 below.

*Table 1-3 Structure of the Environmental Impact Assessment Report (EIAR)*

| No. | Chapter | Content |
|---|---|---|
| 1 | Introduction | Chapter 1 sets out the introduction, the site description, the general methodology and approach to the EIAR. |
| 2 | Description of the Proposed Development & Assessment of Alternatives | As required under Article 5(1)(a) of the EIA Directive, Chapters 2 provides a description of the site, design, and scale of Proposed Development, and as required under Article 5(d), an evaluation of the reasonable alternative design approaches. |
| 3 | Planning and Development Context | Chapter 3 sets the national, regional and local policy framework for the Proposed Development. |
| 4 | Population and Human Health | Chapter 4 covers the requirement for assessment on potentially significant effects to population and human health as required under Article 3(1)(a) of the EIA Directive. |
| 5 | Biodiversity | Chapter 5 covers the requirement of Article 3(1)(b) to assess potentially significant effects on biodiversity (which previously referred only to 'fauna and flora'), having particular attention to species and habitats protected under the Habitats Directive and the Birds Directive. |
| 6 | Land and Soils | Chapter 6 covers the requirement under Article 3(1)(c) of the EIA Directive on Land and Soil to assess the type of soil and geology in the area of the Proposed Development and identifies any potentially significant effects. |
| 7 | Hydrology and Hydrogeology | Chapter 7 covers the requirement under Article 3(1)(c) of the EIA Directive to assess potentially significant effects to water quality arising from the Proposed Development. This chapter will assess any potential effects from pollution and discharges to surface water. |

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| No. | Chapter | Content |
|---|---|---|
| 8 | Air Quality | Chapter 8 covers the requirement under Article 3(1)(c) of the EIA Directive on Air to assess potentially significant effects to air quality in the surrounding environment. |
| 9 | Climate | Chapter 9 covers the requirement under Article 3(1)(c) of the EIA Directive to assess potentially significant effects on Climate Change (greenhouse gas emissions and its vulnerability to climate change). |
| 10 | Noise and Vibration | Chapter 10 covers the requirement to assess potentially significant effects from airborne noise and vibration as required under Article 3(1)(a) of the EIA Directive on Human Health. |
| 11 | Landscape and Visual Impact Assessment | Chapter 11 covers the requirement under Article 3(1)(d) of the EIA Directive to assess potentially significant effects on the landscape. This chapter will assess any potential visual effects to landscape caused by the Proposed Development. |
| 12 | Archaeology and Cultural Heritage | Chapter 12 covers the requirement under Article 3(1)(d) of the EIA Directive to assess potentially significant effects on cultural heritage. |
| 13 | Material Assets - Traffic and Transport | Chapter 13 sets out traffic and transport effects that will be caused on nearby receptors due from increase vehicle movements during the construction phase and operational phase. |
| 14 | Material Assets – Waste and Utilities | Chapter 14 covers the requirement under Article 3(1)(d) of the EIA Directive to assess potentially significant effects on material assets. This chapter will identify effects to existing utilities and infrastructure from the development of the Proposed Development. |
| 15 | Risk Management | Chapter 15 covers the requirement under Article 3(2) of the EIA Directive, to include the expected effects deriving from the vulnerability of the Proposed Development to risks of major accidents and/or disasters. |
| 16 | Interactions | As required under Article 3(1)(e) of the EIA Directive, Chapter 16 provides an assessment of the interaction between all of the environmental aspects referred to in this EIAR. |
| 17 | Summary of Mitigation and Monitoring Measures | Chapter 17 describes mitigation and monitoring as required under Article 5(1) of the EIA Directive in order to avoid, prevent, reduce, or if possible, offset any identified significant adverse effects on the environment and, where appropriate, describes any proposed monitoring arrangements. |

This approach employs standard descriptive methods, replicable prediction techniques and standardised impact/effect descriptions to provide an appropriate evaluation of each environmental topic under consideration.

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## 1.10 Methodology Used to Produce this EIAR

The methodology employed to produce this EIAR is detailed in Table 1-4 below. The objective is to evaluate each environmental topic, both individually and collectively, in a systematic and objective manner.

The methodology will outline the methods used to describe the baseline environmental conditions as well as predict the likely effects on the environment of the Proposed Development. The data and survey requirements for each chapter will vary depending on the environmental topic and will be chosen by the particular specialist based on relevant and up-to-date legislation, best practice guidance, policy requirements, and professional judgement. Similarly, the study area is also defined for each environmental topic based on professional judgement and experience.

All environmental topics require desktop reviews of all relevant data at a minimum. These desktop studies are then supplemented by field studies and consultations with relevant stakeholders, for example interested parties, statutory bodies and local authorities, as required for each environmental topic.

*Table 1-4 EIA Chapter Approach*

| Chapter | Description of Section |
|---|---|
| Introduction | Provides an overview of the specialist area and specifies the specialist who prepared the assessment. |
| Study Methodology | This subsection outlines the method by which the relevant impact assessment has been conducted within that chapter. |
| The Existing Receiving Environment (Baseline Situation) | This section will describe and assess the receiving environment, the context, character, significance and sensitivity of the baseline receiving environment into which the Proposed Development will fit. This analysis also takes account of any other proposed developments that are likely to proceed in the immediate surroundings. |
| Characteristics of the Proposed Development | Consideration of the '*Characteristics of the Proposed Development'* allows for a projection of the '*level of impact'* on any particular aspect of the environment that could arise.<br>For each chapter those characteristics of the Proposed Development which are relevant to the area of study are described; for example, the chapter on landscape and visual impact addresses issues such as height, design and impact on the surrounding landscape. |

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| Chapter | Description of Section |
|---|---|
| Potential Effect of the Proposed Development | This section provides a description of the specific, direct and indirect, effects that the Proposed Development may have. This analysis is provided with reference to both the Existing Receiving Environment and Characteristics of the Proposed Development sections, while also referring to the: (i) magnitude and intensity, (ii) integrity, (iii) duration and (iv) probability of effects.<br>The assessment addresses whether the effects are direct, indirect, secondary or cumulative in nature. It also looks at the timescale of such effects e.g. are they short, medium, long-term, and are they of a temporary, permanent, continuous or intermittent nature, and are they positive or negative effects. The impact interactions are also addressed. |
| Avoidance, Remedial and Mitigation Measures | This section of each chapter describes the mitigation measures which are required. The requirement to describe mitigation measures is laid out in the EIA Directive, as implemented by the Planning Act and the Planning Regulations. Avoidance, remedial and mitigation measures describe any corrective or mitigative measures that are either practicable or reasonable, having regard to the potential effects of the Proposed Development. This includes avoidance, reduction and remedy measures as set out in Section 4.7 of the Development Management Guidelines 2007, to reduce or eliminate any significant adverse effects identified. |
| Residual Effects of the Proposed Development | This section allows for a qualitative description of the resultant specific direct, indirect, secondary, cumulative, short, medium and long-term, temporary, permanent, continuous, or intermittent, positive and negative effects as well as impact interactions which the Proposed Development may have, assuming all mitigation measures are fully and successfully applied. |
| Do Nothing Effect | In order to provide a qualitative and equitable assessment of the Proposed Development, this section considers the Proposed Development in the context of the likely effects upon the receiving environment should the Proposed Development not take place. |
| Monitoring | This involves a description of monitoring in a post-development phase, if required. This section addresses the effects that require monitoring, along with the methods and the agencies that are responsible for such monitoring. |
| Reinstatement | While not applicable to every aspect of the environment considered within the EIAR, certain measures may need to be proposed to ensure that in the event of the proposal being discontinued, there will be minimal effectt to the environment. |
| Interactions | This section provides a description of impact interactions together with potential indirect, secondary and cumulative effects. |

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| Chapter | Description of Section |
|---|---|
| Difficulties Encountered in Compiling Information | The EIA Directive requires that the EIAR includes *'details of difficulties (for example technical deficiencies or lack of knowledge) encountered compiling the required information, and the main uncertainties involved'* (EIA Directive, Annex IV, Part 6). Each chapter that contains an environmental baseline and assessment contains a section outlining any difficulties encountered in compiling that chapter. |

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## 1.11 Non-Technical Summary

A Non-Technical Summary of the EIAR has also been prepared. The EIA Directive states that one of the objectives of the EIA process is to ensure that the public are fully aware of the environmental implications of any decisions. EPA Guidelines note that the non-technical summary of the EIAR should facilitate the dissemination of the information contained in the EIAR and that the core objective is to ensure that the public is made as fully aware as possible of the likely environmental effects of projects prior to a decision being made by Meath County Council. A Non-Technical Summary of the EIAR has therefore been prepared which summarises the key environmental impacts and is provided as a separately bound document.

## 1.12 Links between EIAR and Appropriate Assessment

A Screening Report for Appropriate Assessment (AA) has been carried out by Verdé Environmental Consultants for the Proposed Development, to determine if there is a risk of effects to any Natura 2000 sites.

Upon the examination, analysis and evaluation of the relevant information and applying the precautionary principle, it is concluded by the authors of the AA Screening report that, ‘‘There is a requirement to proceed to Stage 2 of the Appropriate Assessment process; and the preparation of an NIS is required’’.

Design alteration requirements and appropriate mitigation measures have been set out in the NIS, such that their implementation will ensure that impacts on the conservation objectives of European sites will be unlikely during the construction and operational Phases of the Proposed Development. Consequently, there will be no adverse effects on any European sites.

While AA is required by the proposer of any plan or project likely to have an adverse effect on a Natura 2000 site, EIA is required for projects listed in Annex I of the EIA Directive. The requirement for EIA relative to projects listed in Annex II of the EIA Directive is determined on a case by case. While these two different types of assessment are independent and are required by separate legislation, namely the Birds and Habitat Directives (i.e. AA) and the EIA Directive (i.e. EIAR) there is a degree of overlap, particularly in the Biodiversity Chapter of the EIAR.

## 1.13 Availability of EIAR Documents

A copy of this EIAR document and Non-Technical Summary is available for purchase at the offices of Meath County Council at a fee not exceeding the reasonable cost of reproducing the document. Digital copies of the EIAR, including all associated documentation, are also

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available online via the Meath County Council Planning Portal: (https://www.meath.ie/council/council-services/planning-and-building/planning-permission/view-or-search-planning-applications).

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## 1.14 Statement of Difficulties Encountered

No exceptional difficulties were experienced in compiling the necessary information for the Proposed Development. Where any specific difficulties were encountered these are outlined in the relevant chapter of the EIAR.

## 1.15 Quotations

The application is also accompanied by a Non-Technical Summary of the EIAR, which is laid out in a similar, but condensed format to the main EIAR. The structure, presentation and the Non-Technical Summary of the EIAR, as well as the arrangements for public access, all facilitate the dissemination of the information contained in the EIAR. The core objective is to ensure that the public and local community are aware of the likely environmental impacts of the Proposed Development prior to the granting of consent.

However, it is important to acknowledge that the EIAR by its nature contains statements about the Proposed Development, some of which are positive and some less than positive. Selective quotation or quotations out of context can give a misleading impression of the findings of the study.

The EIA Regulations require that difficulties such as technical deficiencies, lack of information or knowledge encountered in compiling any specified information for the EIAR be described.

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# 2 DESCRIPTION OF THE PROPOSED DEVELOPMENT

## 2.1 Introduction

This chapter provides a description of the Proposed Development together with details of the existing environment. In accordance with Article 5(1)(a) of the EIA Directive 2011/92/EU as amended by Directive 2014/52/EU, the description of the project should comprise:

> *'…information on the site, design, size and other relevant features of the project'.*

The Environmental Impact Assessment Report (EIAR), must contain information in relation to the environmental impact of both the Proposed Development and all other reasonable alternatives studied. An indication of the main reasons for the option chosen must be given, taking into account the effects of the Proposed Development on the environment.

### 2.1.1 Quality Assurance and Competence

This chapter has been prepared by Michelle Gaffney Senior EIA consultant with DNV, with over four years' experience in environmental consultancy. Michelle holds a B.A (Hons) in Earth Science from Trinity College and is currently advancing expertise through an MSc in Environmental Sustainability at University College Dublin. Michelle has been involved in the technical input into a range of Environmental Impact Assessment Report Chapters and has been involved in the project management and delivery of a range of EIARs of a similar scale and nature to the Proposed Development.

This chapter was reviewed by Grainne Ryan, Principal EIA Consultant at DNV. Gráinne is a Principal Environmental Consultant with 11 years' experience, specialising in EIAs for strategic infrastructure, renewable energy, residential, industrial and pharmaceutical projects. Gráinne has a B.A, in Geography, Planning and Environmental Policy, an MSc in Environmental Policy and a Post Graduate Diploma in Project Management.

This chapter has been approved by Catherine Keogan, Technical Director and EIA Lead at DNV. Catherine is an environmental consultant with 37 years' experience in consultancy, specialising in EIAs for large-scale residential, commercial developments, pharmaceutical, BESS and solar projects working closely with a range of developers, planning consultants and architects within the public and private sector. Catherine has a B.Sc. (Hons) in Analytical Science and a Post Graduate Diploma in Renewable Energy Technology Systems.

## 2.2 Site Location and Description

The site of the Proposed Development, as shown in Figure 2-1, is located approximately 2.5km west of Drogheda town centre, within the southwestern environs of Drogheda, County Meath, adjacent to the Meath–Louth County border. The site comprises a greenfield area extending to 9.20ha consisting of open fields used for agriculture.

To the west and south, the site is bordered by agricultural lands, with the M1 motorway located approximately 200m to the west of the site. This boundary is effectively screened by established vegetation and planting, providing a natural visual buffer between the site and the motorway, which is examined in greater detail in Chapter 11 of this EIAR. The site also adjoins

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lands to the west and south that are subject to a strategic reserve of zoned lands which are not, at present, available for residential development.

To the north, the site is bounded by Rathmullan Road and the Boyne Greenway, beyond which lies the River Boyne, approximately 40m from the site boundary. To the east, the site is also bounded by Rathmullan road, across which lies existing residential developments comprising two- storey terrace houses and three-storey duplexes.

Topographically, the site is elevated by approximately 10m above the adjacent riverbank and slopes gently from the southwest to the northeast towards the River Boyne, with existing ground levels ranging from 3m Ordnance Datum (OD) to 6m OD. Furthermore, the site is located approximately 130m west of the western boundary of the World Heritage Site Buffer Zone over the M1 motorway, which is discussed in further detail in Chapter 11 of this EIAR.

Access to the site is currently facilitated through an existing entrance located off the Rathmullan Road. The Proposed Development will be accessed from Rathmullan Road via a new signal-controlled 4-arm junction.

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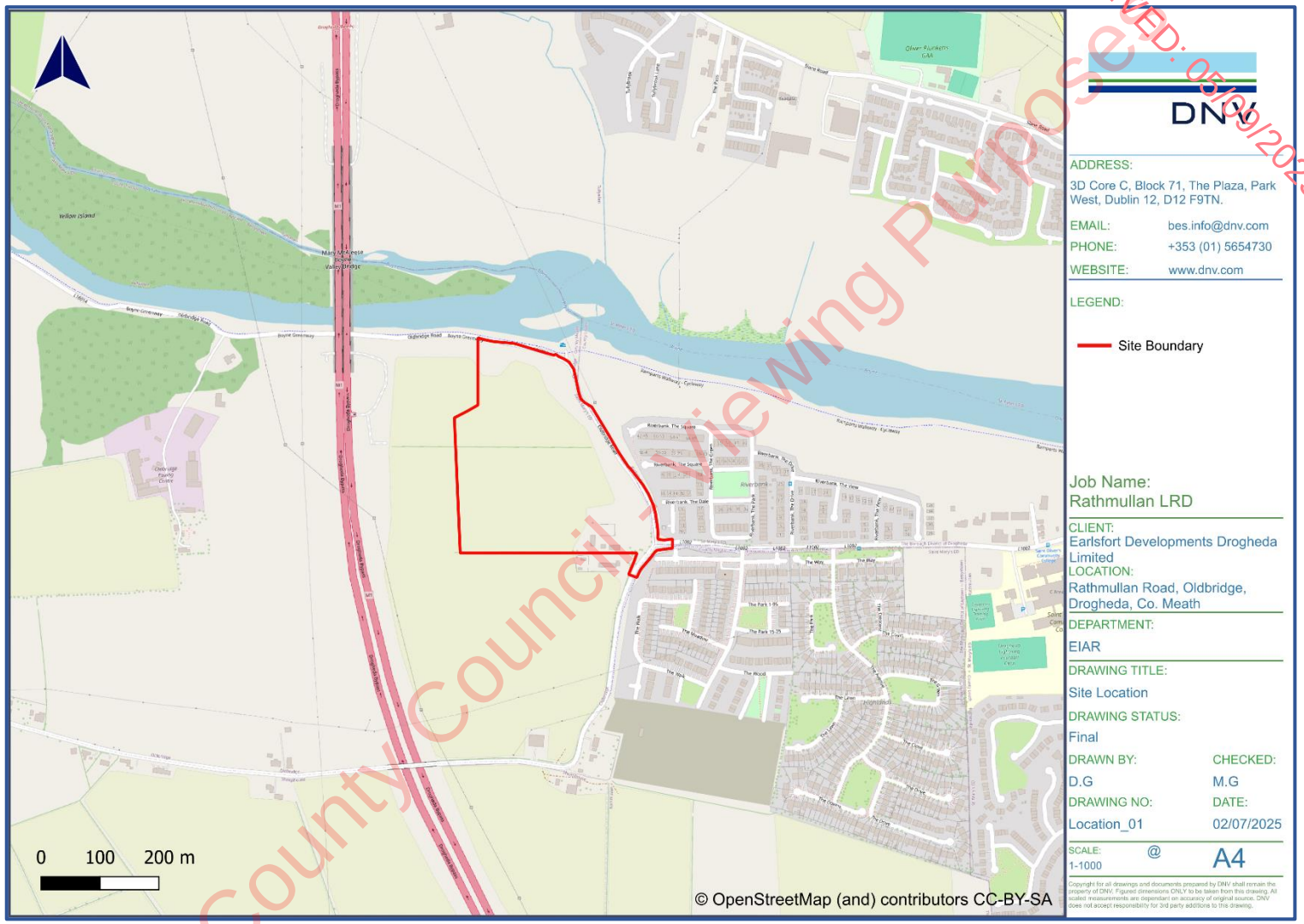



*Figure 2-1 Site Location*

## 2.3 Site Background and Site History

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The site of the Proposed Development consists of open fields used for agriculture, with former agricultural building structures located along the eastern boundary of the site. The lands to the east of the site have been significantly developed in recent years, however the adjoining lands to the west and south remain undeveloped.

Under the Meath County Development Plan 2021-2027, the Proposed Development site is subject to two zoning objectives. The majority of the site is zoned as "*A2 New Residential -To provide for new residential communities with ancillary community facilities, neighbourhood facilities and employment uses as considered appropriate for the status of the centre in the Settlement Hierarchy".*

The remainder of the site to the north, adjacent to the Boyne Valley, along with a part of the eastern section of the site is zoned as "*F1 Open Space -To provide for and improve open spaces for active and passive recreational amenities".*

It is considered that the proposed large-scale residential development and crèche are acceptable uses with regards to the zoning applied in the site.

There is an extensive planning history relating to the Proposed Development site, as detailed in the Statement of Consistency & Planning Report prepared by Hughes Planning & Development Consultants (2025), submitted as part of this application and summarised in Table 2-1.

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### 2.1.1 Planning History for the Site of the Proposed Development

*Table 2-1 Site Planning History*

| Application Registration Reference | Address | Development Proposal | Decision |
|---|---|---|---|
| MCC: SA60260<br><br>Niall Mellon & Pat O'Reilly | Oldbridge, Rathmullan Road, Drogheda, Co. Meath | 745 no. residential units comprising as follows; 28 no. four bed detached houses (130m$^2$ each with optional attic conversion for additional bedroom of 27m$^2$), 16 no. five bed detached houses (202m$^2$ each with optional attic conversion for additional bedroom/storage space of 45m$^2$), 4 no. two bed townhouses (ranging from 80-139m$^2$ each), 2 no. three bed townhouses (169m$^2$ each), 111 no. two bed terraced houses (80m$^2$ each with optional attic conversion for additional bedroom of 14m$^2$), 66 no. three bed terraced houses (119m$^2$ each with optional attic conversion for additional bedroom of 23m$^2$), 26 no. 24 bed terraced houses (149m$^2$ each), 41 no. four bed semi-detached houses (130m$^2$ each with optional attic conversion for additional bedroom of 27m$^2$) 147 no. three bed semi-detached houses (119m$^2$ each with optional attic conversion for additional bedroom 0f 23m$^2$) 87 no. two bed apartments (88m$^2$ each) at ground floor level of three story duplex building, 87 no. three bed duplex townhouses (105m$^2$ each), 8 no. one bed apartments (73m$^2$ each), 122 no. two bed apartments (88m$^2$ each); associated car-parking spaces (1132 no.) at under croft/basement and surface level; provision of a creche (650m$^2$) with associated outdoor play area; a 3.13ha neighborhood park addressing the River Boyne and a 1.6ha linear park bounding the M1 motorway; related open space and landscape works; traffic and carriageway improvements and reconfiguration to Rathmullan Road and | Granted<br><br>20/07/2007<br><br>(Permission approved under Reg. Ref. SA60260 was never enacted and subsequently expired in 2013). |

| Application Registration Reference | Address | Development Proposal | Decision |
|---|---|---|---|
| | | to Sheephaven Road (CR315)including the provision of new vehicular access points to the site at Rathmullan Road (via a new roundabout)and at Sheephaven Road; associated site development and services works including water well compound and secondary borehole facility. All on a site of some 27 hectares. | |
| ABP: SH305552<br><br>Trailford Ltd | Rathmullan Road, Rathmullan, Drogheda, Co. Meath | Demolition of existing farm buildings/structures (1,160 square metres) on site; (ii) construction of 661 number residential dwellings and a neighbourhood centre adjacent to the site's eastern boundary, consisting of a childcare facility (486 square metres), café (63 square metres) and retail unit (318 square metres); (iii) construction of a four-arm signalised junction and works to Rathmullan Road, including the widening of the existing carriageway to six metres and the provision of a two-metre wide footpath linking the proposed development to the River Boyne Boardwalk; (iv) construction of two number priority junctions (one along the site's eastern boundary to provide access to the neighbourhood centre and one along the site's southern boundary to provide a second access to the development), realignment and upgrade works to the un-named local road along the site frontage to the south of the new signalised junction with Rathmullan Road; (v) construction of a strategic foul water pumping station in the north-eastern corner of the site; and (vi) all associated site, landscaping and infrastructural works, including foul and surface water drainage, attenuation areas, open space areas, boundary walls and fences, internal roads and cycle paths and footpaths. | Annulled<br><br>29/01/2020 |

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| Application Registration Reference | Address | Development Proposal | Decision |
|---|---|---|---|
| | | The 661 no. residential dwellings consist of the following: (a) 509 no. double storey semi-detached and terraced houses comprising: • 158 no. two-bed houses, • 269 no. three-bed houses, and • 82 no. four-bed houses; and (b) 152 no. apartments (in Blocks B1, B2, B3, C, D, E and G which vary from three to five storeys in height) comprising: • 13 no. one-bed apartments and • 139 no. two-bed apartments. A total of 1,366 no. car parking spaces are proposed, including 1,018 no. spaces (two number on curtilage spaces per dwelling) serving the proposed dwellings, 195 no. spaces serving the proposed apartments; 111 no. spaces serving visitors to the development; and 42 no. spaces serving the proposed neighbourhood centre. A total of 188 no. bicycle parking spaces are proposed, including 154 no. spaces serving the proposed apartments and 34 no. spaces serving the proposed neighbourhood centre. The development also features 9.20 ha of public open space, including landscaped play spaces and pocket parks throughout the development and 6.13ha of landscaped open space provided adjacent to the Boyne River and M1 motorway frontages. | |
| MCC: 23500<br><br>Trailford Ltd | Lands to the east of the M1 Motorway and west of , Rathmullan Road, Rathmullan, Drogheda, Co Meath | Construction of a residential development comprising 85 no. houses (6 no. two-bedroom houses, 53 no. three-bedroom houses and 26 no. four-bedroom houses) and 2 no. three-storey apartment blocks (Blocks G & H) comprising six no. apartments (two no. one-bedroom apartments and four no. two-bedroom apartments) and an ancillary creche facility (100 sq.m) with external play area, (ii) construction of a new vehicular access road off | Withdrawn<br><br>26/01/2024 |

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| Application Registration Reference | Address | Development Proposal | Decision |
|---|---|---|---|
| | | Rathmullan Road with associated junction works and associated internal access road network with pedestrian and cyclist infrastructure and (iii) all ancillary site and infrastructural works inclusive of landscaped public open space area to the north of the site to be ceded to Meath County Council, general landscaping and public open space provision, boundary treatments, foul/surface water drainage, attenuation areas, pumping station, removal of existing vehicular entrances and provision of visitor car parking bay (four no. spaces) necessary to facilitate the proposed development. Each house will be served by on-curtilage vehicular parking to the front and private amenity space in the form of a rear garden. Each apartment block will have shared access to adjoining bin stores, car parking bays (nine no. car parking spaces per block) and bicycle parking bays (12 no. bicycle parking spaces per block) and each apartment will be provided with private amenity space in the form of a balcony. This application is accompanied by a Natura Impact Statement. This application represents Phase 1 of a two-phase development*<br><br>**Phase 2 of this development is outlined under registration reference 23542* | |
| MCC: 23542 | Lands to the east of the M1 motorway and west of, the Rathmullan Road, Oldbridge, Drogheda, Co Meath | Demolition/removal of all existing farm buildings/structures (315sq.m) on site (ii) construction of a residential development comprising 80 no. houses (12 no. two-bedroom houses, 55 no. three-bedroom houses and 13 no. four-bedroom houses) and two no. three-storey apartment blocks comprising 8 no. apartments (four no. one-bedroom apartments and four no. two-bedroom apartments); (iii) | Withdrawn<br><br>26/01/2024 |

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| Application Registration Reference | Address | Development Proposal | Decision |
|---|---|---|---|
| | | construction of a new vehicular access road off Rathmullan Road, with associated junction works, and associated internal access road network with pedestrian and cyclist infrastructure; and, (iv) all ancillary site and infrastructural works, inclusive of general landscaping and public open space provision, boundary treatments, foul/surface water drainage, attenuation areas, pumping station, removal of existing vehicular entrances and provision of visitor car parking bay (three no. spaces) necessary to facilitate the proposed development. Each house will be served by on-curtilage vehicular parking to the front and private amenity space in the form of a rear garden. Each apartment block will have shared access to adjoining bin stores, car parking bays (nine no. car parking spaces per block) and bicycle parking bays (14 no. bicycle parking spaces per block) and each apartment will be provided with private amenity space in the form of a balcony. This application is accompanied by a Natura Impact Statement. This application represents Phase 2 of a two-phase development. | |

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## 2.4 Description of the Proposed Development

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The Proposed Development will consist of the construction of a new large-scale residential development (LRD) providing a total of 249 no. residential units and provision of a crèche facility, with associated car parking, bicycle parking, public open spaces, and all ancillary works on a site area of 9.20ha.

The Proposed Development site will consist of:

a) the demolition/removal of all existing farm buildings/structures and associated hard standing on site;
b) The construction of a large-scale residential development (LRD) of 249 no. residential units which will consist of:
    - The provision of 170 no. two-storey houses, including 37 no. two-bedroom houses, 111 no. three-bedroom houses and 22 no. four-bedroom houses;
    - 16 no. three story duplex buildings, comprising 16 no. one-bedroom and 16 no. two-bedroom units; and
    - A mix of 8 no. three-storey and 3 no. four-storey apartments blocks accommodating a total of 22 no. one-bedroom and 25 no. two-bedroom apartments;
c) Provision of a three-storey crèche facility (411sq.m) with external play areas at ground and second floors and vehicular/bicycle parking area and;
d) Construction of a new vehicular entrance and access road off Rathmullan Road, with associated junction works and associated internal access road network with pedestrian and cyclist infrastructure.

The Proposed Development will also provide for all ancillary site and infrastructural works, inclusive of removal of existing vehicular entrances, general landscaping and public open space provision, vehicular parking provision (396 no. spaces in total), bicycle parking, boundary treatments, foul/surface water drainage, attenuation areas, provision of pumping station and provision of an ESB substation, as necessary to facilitate the Proposed Development.

Each house will be served by vehicular parking to the front and private amenity space in the form of a rear garden. Each duplex building will be served by vehicular parking to the front and private amenity space in the form of balcony/terrace spaces to the rear. Each apartment block will have shared access to adjoining car parking bays with communal amenity space and bicycle and bin stores provided to the rear and each apartment will be provided with private amenity space in the form of a balcony or terrace.

The Proposed Development includes provision of a landscaped area of public open space to the north of the site, with two pedestrian/cyclist connections (via the northern/eastern site boundaries) to Rathmullan Road, which will be subsequently taken in charge by Meath County Council.

Water supply for the Proposed Development site will be via a connection to the existing watermain on Rathmullan Road. It is proposed that the foul drainage from the Proposed Development will drain via a network of gravity sewers to a new pumping station, located at the low point in the north-eastern corner of the Proposed Development site, along the northern boundary of the site.

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Figure 2-2 illustrates the proposed site location plan, and Figure 2-3 provides a detailed representation of the proposed site layout. These figures are included in Volume 3 Appendix 2-1 and Appendix 2-2, respectively, for further reference

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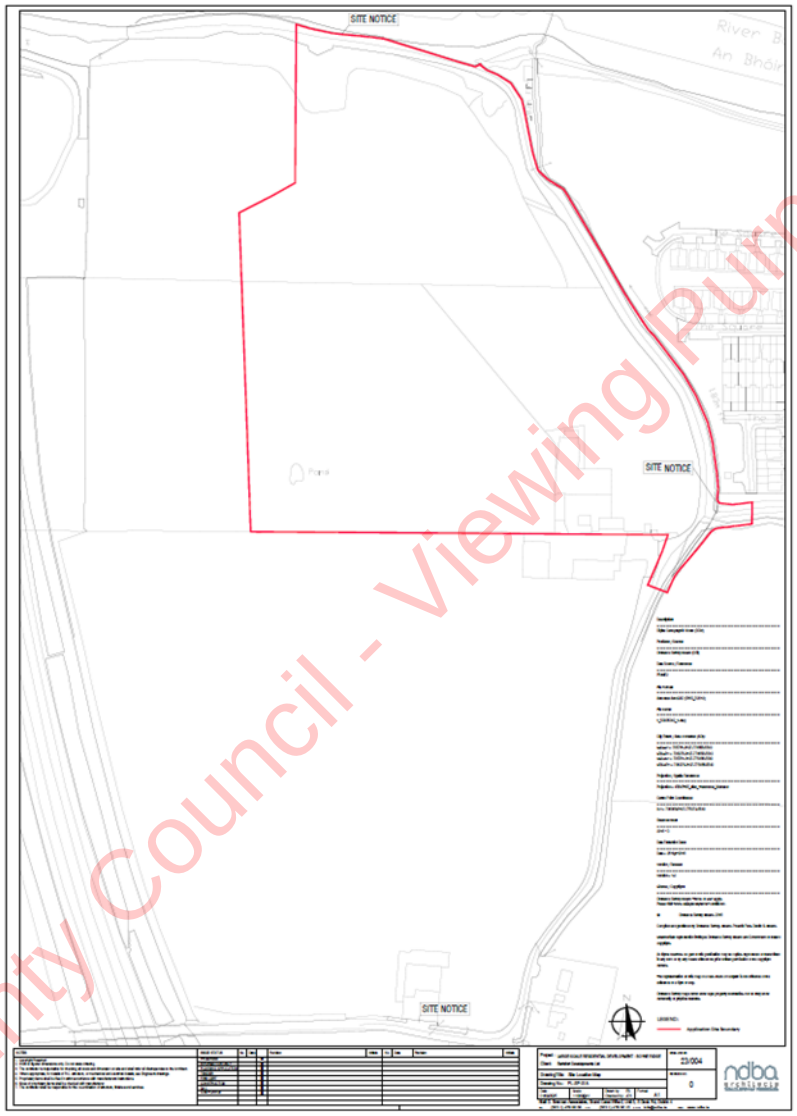



*Figure 2-2 Proposed Site Location Plan*

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*Figure 2-3 Proposed Site Layout*

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## 2.5 Construction of the Proposed Development

Construction (and demolition) will be completed in one phase, provisionally planned as commencing in 2026 and will have a 24-month construction programme.

Working hours for the Construction Phase will be between 08.00 and 17.00 Monday to Friday. Special construction operations may occasionally need to be carried out outside typical working hours in order to minimise disruption to the surrounding area.

A Construction Environmental Management Plan (CEMP) has been prepared by Water-Moylan Engineers (2025). The appointed Contractor will prepare a detailed final CEMP, including detailed construction phasing.

## 2.6 Cumulative Schemes

Cumulative effects are considered in this EIAR in line with Section 3.7.3 of the EPA Guidelines on the *Information to be Contained in Environmental Impact Assessment Reports* (2022).

Extant permissions and current live planning applications that have been taken into consideration for the purposes of determining cumulative effects are detailed in Table 2-2and illustrated in Figure 2-4. For the purpose of this assessment planning applications within the jurisdiction of both Meath County Council and Louth County Council were considered, given the proximity of the site to the Meath-Louth County border.

Each of the technical chapters in this EIAR will assess the potential for cumulative effects with the projects set out in Table 2-2 with the Proposed Development.

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*Table 2-2 List of Cumulative Schemes*

| No. | Application Reg. Ref. | Address | Development Proposal | Decision Date |
|---|---|---|---|---|
| 1 | **MCC planning ref: 211757**<br><br>**ABP-313187-22 Planning Appeal** | South Of Oldbridge Manor, Rathmullan Road, Drogheda, Co. Meath | The construction of 26 no. dwellings consisting of 16 no. 3 bed two storey semi-detached dwellings (Type B2/B3/E2), 4 no. 4 bed two storey semi-detached dwellings (Type D2), 6 no. 3 bed two storey terraced dwellings (Type G2/G3/G4/G5/F) including all roads, footpaths, landscaping and site development works. A new pedestrian and cycle link is proposed to Sheephouse Road from the site. The vehicular access to the development will be from the public road at 'The Boulevard', Oldbridge Manor. A Natura Impact Statement will be submitted to the Planning Authority with the application. Significant further information/revised plans submitted on this application. | 08/03/2022<br>MCC: Granted with 24 no. conditions.<br><br>04/04/2022<br>ABP Appeal Decision Status: Live case stayed by Order of the High Court in [2023] IEHC 218<br><br>No decision as of 03/09/2025 |
| 2 | **MCC Planning ref: 211669**<br><br>**ABP-313190-22**<br><br>**Planning Appeal** | South Of Oldbridge Manor, Rathmullan Road, Drogheda, Co. Meath | The construction of 96 no. dwellings consisting of 4 no. one-bed apartments accommodated in 1 pair of two-storey semi-detached maisonettes (type A & A1), 6 No.2 bedroom two storey terraced dwellings (type G, G1) and 83 no. 3 bedroom terraced and semi-detached dwellings (Type B2, B3, D2, D3, E2, G2, G3) and 3 no. 4 bed detached dwellings (Type H) including landscaping, new roads, footpaths, cycle paths and open space including play area and all associated works. Anew pedestrian and cycle link is proposed to Sheephouse Road from the site. The vehicular access to the development will be from the public road at 'The Boulevard', Oldbridge Manor. A Natura Impact Statement will be submitted to the Planning Authority with the application | 08/03/2022<br>MCC: Granted with 24 no. conditions<br><br>04/04/2022<br>ABP Appeal Decision Status: Live case stayed by Order of the High Court in [2023] IEHC 218<br><br>No decision as of 03/09/2025 |
| 3 | **LCC Planning Ref: 22954** | Mell, Drogheda, Co. Louth | Permission for development on lands south of existing M1 Retail Park, bound by Trinity St and Barrack Lane, for: (i) provision of 10 no. single storey retail units including a part-licensed anchor retail supermarket store (Unit1), a DIY/Home store, including a garden centre (Unit 10), 8 no. smaller retail/commercial units, including a cafe and pharmacy | 08/09/2023<br>Granted with 20 no. conditions |

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| | | | | |
|---|---|---|---|---|
| | | | (Units 2-8) and 1 no. single storey Drive-Thru Restaurant/Cafe unit, including external seating area. A deliveries area, service yard and ground mounted plant units will be provided to the side (south) and rear (west) of Retail Unit 1, a dedicated set down point is also proposed adjacent to the front entrance to Unit 1. Deliveries will also be accommodated to the rear (south) of proposed Units 2 - 10, with a truck turning area provided to the rear (south) of Unit 10. Dock levellers will be provided to the rear of Units 2 - 10 to facilitate loading and unloading of goods. A total of 311 no. car parking spaces are proposed to serve the development, including 23 no. accessible parking spaces, 2 no. click and collect spaces and 17 no. parent and child spaces. A bus parking area (4 spaces) is provided, 104 no. bicycle parking spaces are proposed. A partially covered pedestrian circulation space will be provided to the front of each of the units. (ii) Provision of 2 no. vehicular and pedestrian connection points to the existing MI Retail Park to the north will provide access to the development; (iii) internal roads, footpaths and pedestrian crossings; (iv) trolly bays, signage, hard and soft landscaping, boundary treatments, Electric Vehicle Charging spaces and lighting; (v) associated site and infrastructural works are also proposed which include foul and surface water drainage, plant areas, 3 no. ESB substations and (vi) all associated site development works. An EIAR and a NIS has been submitted with this application. *SFI received on 24/07/2023 which consists of: (a) a revised site layout comprising a substantially reduced quantum of retail/commercial development. The proposed development now comprises 3 no. units in total; see revised newspaper & site notices for full amended description* | |
| 4 | **LCC Planning Ref: 22975** | Leonards Cross, Slane Road, Mell, Drogheda, Co. Louth | Permission for construction of an 8,005sqm assisted living facility with a total of 98 accommodation units in a range of accommodation types as follows: A) 28 no. reablement studios designed to help people to retain or regain their skills and confidence so they can learn to manage again after a period of illness. B) 52 no. 1 bedroom assisted living suites, C) 16 no. 2 bedroom assisted living suites. D) 2 no. 1 bed units to be provided through the subdivision of an existing house on site for use as assisted living suites, or as staff/visitor accommodation. The proposed facility will include cafe/restaurant facilities, staff and administration spaces, nurses station, recreation rooms, meeting spaces, treatment rooms and landscaped gardens together with all associated site development works including boundary walls and fences, car parking, waste water pumping station, surface water attenuation and connections to public utilities, as well as plant rooms, a bin store, roof mounted solar panels and an ESB substation. The facility will deliver a range of tailored care packages to elderly residents on a rental basis only, none of the units will be made available for sale | 10/02/2023<br>Granted with 19 no. conditions |

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| | | | | |
|---|---|---|---|---|
| 5 | **LCC Planning Ref: 211283**<br>**(Amended by 260368 & 2460266)** | Old Slane Road & Mell, Tullyallen, Drogheda, Co. Louth | An application has been made to An Bord Pleanála for permission for a 237 no. dwellings in detached, semi-detached, terraced/townhouse, terraced/duplex and apartment form. Building range in height from 1 to 5 storeys in the following mix - 19 no. 1 bed, 98 no. 2 bed, 99 no. 3 bed and 21 no. 4 bed. Apartment block 5 will have an undercroft car park. All buildings proposed have the option for the installation of photovoltaic/solar panels. The development will provide for a creche with potential capacity for 65 children. Open public space provided extends to c.9240sq.m. Construction of a footpath with public lighting from northern boundary along southern side of R168 providing pedestrian only connection to the M1 Retail Park. A single vehicular connection to the site is proposed from the Old Slane Road at the southern boundary. Full footpath connectivity will be provided along the Old Slane Rd eastwards to the junction with R168 at Leonards Cross. Works to Old Slane Rd provide for sections of footpath, revised road markings and public lighting. Full footpath connection will be available through site connecting Old Slane Rd to the south with R168 to the north and then on to the M1 Retail Park. All associated site development works incl. a pumping station and rising main, infrastructure and service provision, landscaping, boundary treatments, roads, footpaths and cycle paths, public lighting, ESB substation, electrical vehicle charging points, regrading/infilling of land levels, retaining walls/structures. A Natura Impact Statement is included | 08/12/2021<br>Granted with 33 no. conditions |
| 6 | **LCC Planning Ref: 2460514** | Mell, Drogheda, Co. Louth | Permission for development comprising a single warehouse unit, 2 no. site entrances, internal access through road and ancillary works including surface water drainage at Mell, over a proposal application site area of 3.38 ha. The proposed development will include 1 no. warehouse unit of 3,347 m2 in area. The unit has been placed to the east of the site and the yard area at the west, parallel to the main entrance road. The proposed warehouse unit will include ancillary office area of 476 m2 located at the south-eastern corner of the proposed warehouse unit. The yard area is approximately 2,616 m2 and comprises 3no. loading docks and 1no. ground level door, services area and provision for trailer parking. Staff and Visitors' car parking comprises 33 spaces (31 standard sizes and 2 accessible spaces), also provision of a bicycle parking area for 19 bicycles. A proposed internal access road of 516m will be developed, connecting the R166 regional road with the R168. This will include the development of 2 no. accesses, one access onto each of the regional roads. The access road will also include a segregated footpath and cycleway along its length. The development will include all ancillary servicing, surface water management infrastructure, soft landscaping and lighting. Surface water management infrastructure will include permeable paving, rainwater harvesting, underground attenuation tank and detention pond in addition to surface water drainage and a proposed connection point to an existing storm sewer on the R168. A Natura Impact Statement has been prepared for this application | 23/05/2025<br>Granted with 18 no. conditions |

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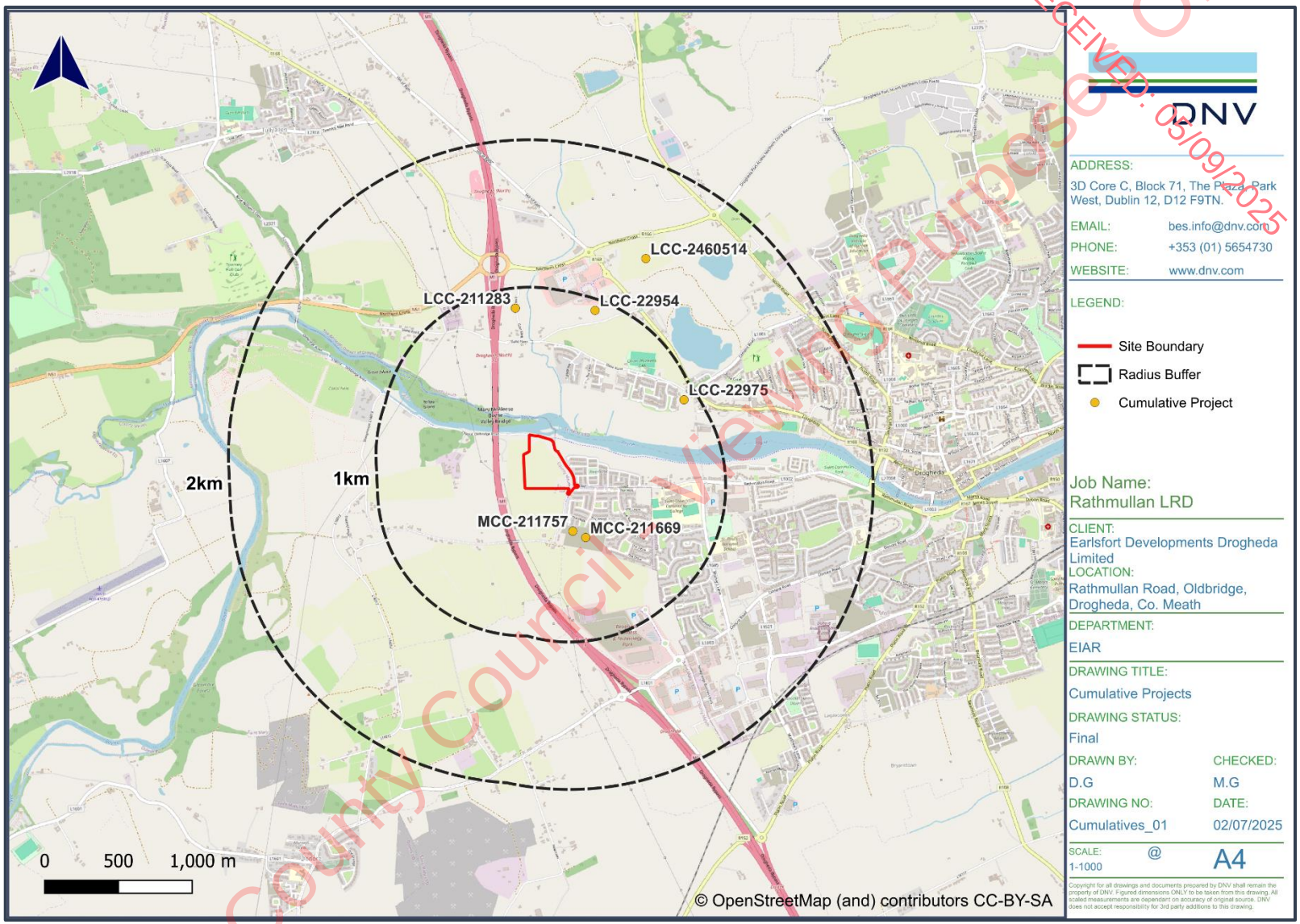



*Figure 2-4 Cumulative Projects*

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## 2.7 Description of Alternatives

### 2.7.1 Introduction

This section provides a description of the reasonable alternatives that have been considered.

Under Article 5(1)(d) of the EIA Directive 2011/92/EU, as amended by Directive 2014/52/EU, developers are required to provide:

> *"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)(f) of the EIA Directive requires that the EIAR contains the following:

> *"any additional information specified in Annex IV relevant to the specific characteristics of a particular project or type of project and to the environmental features likely to be affected."*

Further detail is provided in Annex IV of the Directive, which states:

> *"A description of the reasonable alternatives (for example in terms of project design, technology, location, size and scale) studied by the developer, which are relevant to the proposed project and its specific characteristics, and an indication of the main reasons for selecting the chosen option, including a comparison of the environmental effects."*

In the Irish context, Schedule 6, Paragraph 1(d) of the Planning and Development Regulations 2001, as amended, mirrors this requirement:

> *"A description of the reasonable alternatives studied by the person or persons who prepared the EIAR, which are relevant to the proposed development and its specific characteristics, and an indication of the main reasons for the option chosen, taking into account the effects of the proposed development on the environment."*

This legal framework ensures that the EIAR presents a transparent and environmentally informed rationale for the selected development option, supported by a representative range of practicable alternatives. The approach taken in this chapter is consistent with the guidance provided in the EPA Guidelines on the Information to be Contained in Environmental Impact Assessment Reports (EPA, 2022), which emphasise that while a detailed assessment of each alternative is not required, the main alternatives should be described with reference to environmental considerations and the rationale for the chosen option.

This section of the EIAR provides an explanation of the reasonable alternatives examined throughout the design and consultation process. This serves to indicate the main reasons for choosing the Proposed Development, taking into account and providing a comparison of the environmental effects. The alternatives may be described at four levels:

- Alternative locations;
- Alternative designs;
- Alternative layouts; and
- Alternative processes.

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Pursuant to Section 3.4.1 of the Environmental Protection Agency (EPA) Guidelines on the Information to be Contained in Environmental Impact Assessment Reports (*EPA, 2022*), the consideration of alternatives also needs to be cognisant of the fact that "*in some instances some of the alternatives described below will not be applicable - e.g. there may be no relevant 'alternative location'…*"

In accordance with EPA Guidelines (EPA, 2022), different types of alternatives may be considered at several key phases during the process. As environmental issues emerge during the preparation of the EIAR, alternative designs may need to be, and if necessary, will be considered early in the process or alternative mitigation options may need to be considered towards the end of the process.

The EPA Guidelines (EPA, 2022) states:

> "*The objective is for the developer to present a representative range of the practicable alternatives considered. The alternatives should be described with 'an indication of the main reasons for selecting the chosen option'. It is generally sufficient to provide a broad description of each main alternative and the key issues associated with each, showing how environmental considerations were taken into account is deciding on the selected option. A detailed assessment (or 'mini-EIA') of each alternative is not required*."

The following sections of this chapter of the EIAR contains an analysis of the alternative development options for the site, describing design options and changes which were incorporated into the scheme as the proposals progressed. The key considerations and amendments to the design of the scheme, having regard to and comparing the key environmental effects, are set out and discussed.

#### 2.7.1.1 Alternative Locations

Three possible alternatives have been considered in terms of alternative locations for the Proposed Development.

1. The Do-Nothing Alternative
2. Develop another greenfield site
3. Purchase another existing site with current planning permission for a similar development

The Do-Nothing Alternative would see the site remain as agricultural lands over an area of 9.20ha. A "do-nothing" scenario is considered to represent an inappropriate, unsustainable and inefficient use of these residentially zoned lands.

For another greenfield site to be developed, a similar impact would arise by siting a residential development with a crèche at this scale on such a site. The existing site of the Proposed Development lies within lands that have already been zoned for residential development and are currently underutilised in that respect. The lands across the majority of the site are zoned as '*A2 – New Residential -To provide for new residential communities with ancillary community facilities, neighbourhood facilities and employment uses as considered appropriate for the status of the centre in the Settlement Hierarchy*', under the Meath County Development Plan 2021-2027.The remainder of the site to the north adjacent to the Boyne Valley and part of the eastern section is zoned as '*F1 – Open Space To provide for and improve open spaces for*

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*active and passive recreational amenities"*. Additionally, the site has been used as agricultural land for centuries, and thus has a history of being used for human uses. The Proposed Development site offers the opportunity to deliver compact growth in line with national policy, the Meath County Development Plan 2021-2027, and is well-placed to accommodate potential future integration with adjoining lands, should they be brought forward for development under future plans.

The site is already in the ownership of the Applicant, hence purchasing another existing site with current planning permission was discounted due to the unlikely availability of such a site on the market and the levels of capital that would be required to purchase such a site. Additionally, the site is well located, served by public transport and is within a short distance of key employment locations such as Drogheda Town Centre, with links to the M1. In terms of current transport options, the site is directly serviced by Bus Eireann No. 173, which serves the wider Drogheda area. MacBride train station is located approximately 3.8km to the west of the Proposed Development site, offering a high frequency, high-capacity public transport service with direct links to Dublin City Centre. The M1 motorway is located 2.5km from the site also connects Drogheda to Dublin City Centre, while also acting as the primary road connecting Dublin to Belfast.

The Proposed Development is also well located in proximity to natural recreational and amenity areas, such as the Boyne Greenway, located to the north of the site. Additionally, the Battle of the Boyne Visitor Centre and Brú na Bóinne Visitor Centre, are located approximately 1.85km and 4.40km to the north-west and south-west of the site respectively.

Having regard to the above alternatives, the selected location is considered to be the most suitable location for the Proposed Development.

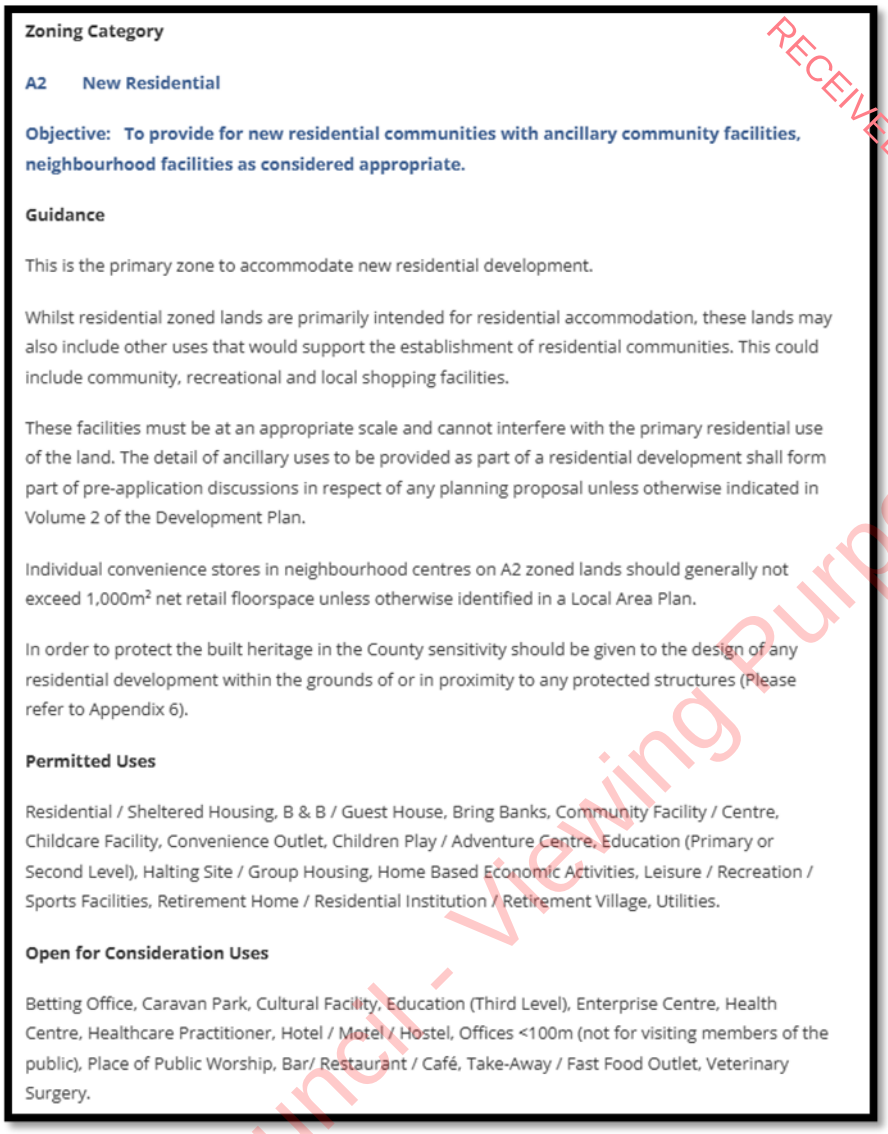
#### 2.7.1.2 Alternative Uses

The lands across the majority of the site are zoned as '*A2 – New Residential -To provide for new residential communities with ancillary community facilities, neighbourhood facilities and employment uses as considered appropriate for the status of the centre in the Settlement Hierarchy*', under the Meath County Development Plan 2021-2027.

The remainder of the site to the north adjacent to the Boyne Valley and part of the eastern section is zoned as '*F1 – Open Space To provide for and improve open spaces for active and passive recreational amenities"*.

As per the Meath County Development Plan 2021-2027, the uses that are permitted and open for consideration are detailed in Figure 2-5 and Figure 2-6.

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**Zoning Category**

**A2 New Residential**

**Objective: To provide for new residential communities with ancillary community facilities, neighbourhood facilities as considered appropriate.**

**Guidance**

This is the primary zone to accommodate new residential development.

Whilst residential zoned lands are primarily intended for residential accommodation, these lands may also include other uses that would support the establishment of residential communities. This could include community, recreational and local shopping facilities.

These facilities must be at an appropriate scale and cannot interfere with the primary residential use of the land. The detail of ancillary uses to be provided as part of a residential development shall form part of pre-application discussions in respect of any planning proposal unless otherwise indicated in Volume 2 of the Development Plan.

Individual convenience stores in neighbourhood centres on A2 zoned lands should generally not exceed 1,000m² net retail floorspace unless otherwise identified in a Local Area Plan.

In order to protect the built heritage in the County sensitivity should be given to the design of any residential development within the grounds of or in proximity to any protected structures (Please refer to Appendix 6).

**Permitted Uses**

Residential / Sheltered Housing, B & B / Guest House, Bring Banks, Community Facility / Centre, Childcare Facility, Convenience Outlet, Children Play / Adventure Centre, Education (Primary or Second Level), Halting Site / Group Housing, Home Based Economic Activities, Leisure / Recreation / Sports Facilities, Retirement Home / Residential Institution / Retirement Village, Utilities.

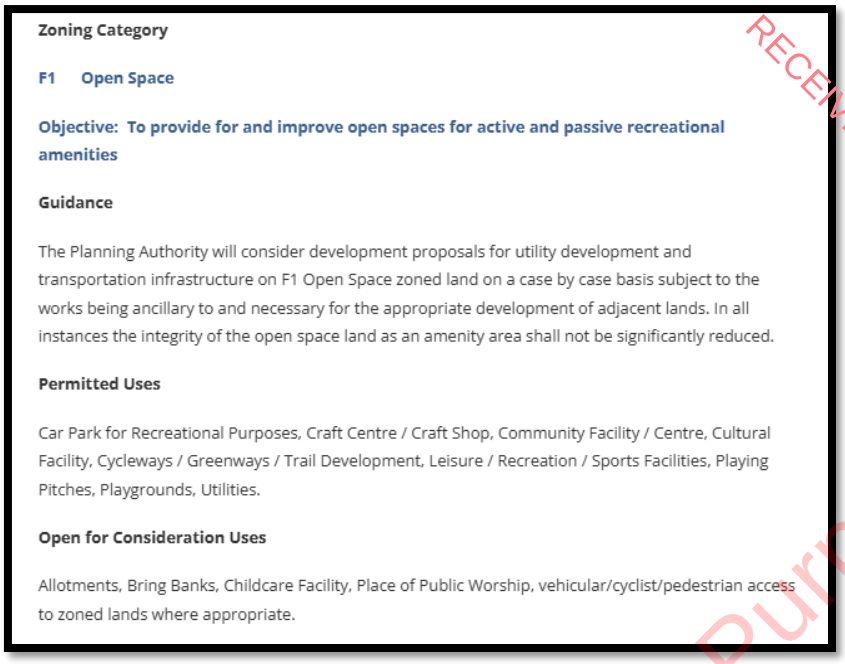
**Open for Consideration Uses**

Betting Office, Caravan Park, Cultural Facility, Education (Third Level), Enterprise Centre, Health Centre, Healthcare Practitioner, Hotel / Motel / Hostel, Offices <100m (not for visiting members of the public), Place of Public Worship, Bar/ Restaurant / Café, Take-Away / Fast Food Outlet, Veterinary Surgery.

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*Figure 2-5 Permissible Use Classes related to Zoning Objective A2 (Meath County Development Plan 2021-2027)*

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**Zoning Category**

**F1 Open Space**

**Objective: To provide for and improve open spaces for active and passive recreational amenities**

**Guidance**

The Planning Authority will consider development proposals for utility development and transportation infrastructure on F1 Open Space zoned land on a case by case basis subject to the works being ancillary to and necessary for the appropriate development of adjacent lands. In all instances the integrity of the open space land as an amenity area shall not be significantly reduced.

**Permitted Uses**

Car Park for Recreational Purposes, Craft Centre / Craft Shop, Community Facility / Centre, Cultural Facility, Cycleways / Greenways / Trail Development, Leisure / Recreation / Sports Facilities, Playing Pitches, Playgrounds, Utilities.

**Open for Consideration Uses**

Allotments, Bring Banks, Childcare Facility, Place of Public Worship, vehicular/cyclist/pedestrian access to zoned lands where appropriate.

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*Figure 2-6 Permissible Use Classes related to Zoning Objectives F1 (Meath County Development Plan 2021-2027)*

As the Proposed Development consists of residential units and a crèche, the Proposed Development type is listed as 'Permitted Uses', under the A2 Zoning Objective.

Furthermore, the proposed dwellings and apartments have been offset from the portion of the site zoned 'F1', with the 'F1' zoned land being used for landscaped public open space, therefore satisfying the permitted uses associated with the F1 Zoning objective.

If the Proposed Development is not advanced, the site will remain as greenfield parcel of land. In light of the zoning objectives for the site of the Proposed Development, as well as the current demand for high quality residential units in Drogheda, which was the largest town in the State in Census 2022, with a population of 44,145 (CSO, 2022), other land uses on site would not be considered appropriate alternatives, or would not be in accordance with the planning policy context pertaining to the lands.

The lack of housing supply in Ireland is a well-documented and ongoing issue. The Proposed Development incorporates the construction of 249 no. residential units which will service the demand for housing in the area. As such this is considered an appropriate use of the land.

Due to the nature of the current proposal, i.e., the development of residential dwellings and supporting community facilities including a childcare facility it was not considered necessary to consider alternative uses for the Proposed Development.

#### 2.7.1.3 Alternative Design and Layouts

Both the context and approach to the design and layout of the site of the Proposed Development, and the emerging final design have been subject to consultation with Meath County Council Planning Department under Section 32D of the Planning and Development Act, 2000 (as amended). A Large-Scale Residential Development Opinion meeting was held

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on 5 March 2025 with members of Meath County Council, the Applicant, and the design team in attendance. An Opinion was issued from Meath County Council on 1 April 2025.

The Proposed Development has been prepared in accordance with the requirements of relevant planning policies, including:

- National Planning Framework;
- Regional Spatial and Economic Strategy for the Eastern and Midland Region (2020);
- Relevant Section 28 Guidelines, including:
    - Urban Development and Building Heights Guidelines (2018) ; and
    - Planning Design Standards for Apartments - Guidelines for Planning Authorities, 2025.
- Meath County Development Plan 2021–2027; and where relevant
- Louth County Development Plan 2021–2027

Although the LRD Opinion from Meath County Council was issued prior to the publication of the *Planning Design Standards for Apartments - Guidelines for Planning Authorities (2025)* on 8 July 2025, the Proposed Development has since been reviewed in light of the updated guidelines. Following this review, it is confirmed that the proposed design remains in compliance with the relevant standards referred to therein.

Alternative designs for the Proposed Development were considered and developed by the architects during the design development process, with input from the overall project team. This involved a constantly evolving design whereby different solutions were tested to establish the optimum design.

The evolving layout was shaped by considerations such as site permeability, housing mix, public open space distribution, urban form, and integration with green and blue infrastructure. Revisions incorporated feedback from the Planning Authority and specialist inputs, including landscape, transport, and ecology. The result is a scheme that balances density and amenity, responds to the site's physical characteristics, and aligns with broader planning policy objectives.

The key alternatives and design decisions taken during the development of the proposal are detailed in the Architectural Design Statement prepared by NDBA Architects (2025), submitted as part of this application and summarised hereunder.

Option 1 – Initial Design Solution

The first design option explored by NDBA Architects as shown in Figure 2-7 focused on establishing a strong visual axis from the primary site entrance towards the Mary McAleese Bridge, using it as a focal point and vista terminus. Housing and apartment buildings were arranged on either side of this central spine, with open spaces set out in a linear format,one adjacent to the main access road and another alongside Rathmullan Road, leading down toward the River Boyne. However, in early consultation with Meath County Council, it was felt that the treatment of the entrance lacked definition and that the apartment elements were not well integrated within the overall scheme.

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*Figure 2-7 Initial Design Solution (NDBA Architects, 2025)*

Option 2 – Developed Design Solution

The second design option developed by NDBA Architects as shown in Figure 2-8 sought to respond to feedback on the initial layout by softening the geometry of the street network, introducing curved streets and a more organic movement through the site. A larger central open space was introduced, serving as the focal point for the neighbourhood, complemented by a smaller pocket park at the south-western corner of the site. This supported improved permeability and potential future connectivity with adjacent 'White Lands' to the west and south. The number of apartment buildings was significantly reduced and repositioned closer to the site entrance, establishing a clearer sense of arrival while addressing earlier concerns around their siting.




*Figure 2-8: Developed Design Solution (NDBA Architects, 2025)*

Option 3 – Further Developed Design Solution

The third design option as outlined in Figure 2-9, built further upon the principles established in Option 2, refining the approach to open space and built form. The curvilinear street layout was reinforced to support legibility and place identity, while the central open space was expanded to incorporate portions of the previously proposed linear green corridor, creating a larger and more multifunctional landscape amenity at the heart of the development. The south-west pocket park was reconfigured as a series of green spaces along the western boundary, enhancing passive amenity and maintaining opportunities for future linkages. The apartment buildings were better integrated into the overall layout, repositioned as book-end elements or focal points that terminate key views and draw the eye toward the central open space, thereby anchoring them more meaningfully within the scheme's urban structure.

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*Figure 2-9: Further Developed Design Solution (NDBA Architects, 2025)*

Overall, a high-quality final layout and design has been achieved, considering the position of the proposed blocks and units. It is considered that the layout of the Proposed Development is the optimal solution for the lands. It is further considered that the scheme design maximises the development potential of a strategically positioned and underutilised plot, adjacent to the townland of Drogheda.

#### 2.7.1.4 Alternative Process

Due to the nature of the Proposed Development (i.e. mixed use / primarily residential) where the planning application will be submitted to Meath County Council it was not considered necessary to consider alternative processes for the Proposed Development.

## 2.8 The Existence of the Project

The Construction Phase will last approximately 24 months in total and occur in one phase. During the Construction Phase of the Proposed Development there will be approximately 80 - 120 no. jobs created at the peak of construction works. Hence, for the duration of the

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Construction Phase of the Proposed Development there will be a short-term increase in construction employment in the area, which will have a positive impact, both directly and indirectly, on the local economy.

The Operational Phase will result in an increase in the population of the area, and it will have a positive impact on the long-term supply needs of housing in Drogheda. In addition to housing, a crèche facility will also be provided, creating approximately five jobs. Hence, the Operational Phase of the Proposed Development will have the potential to create employment in the local area, whilst also providing a high standard of living for new and existing local residents. Employment will be also created by the maintenance and management of the Proposed Development.

Any likely significant environmental effects of the Proposed Development are fully addressed in the relevant specialist chapters of this EIAR. The Proposed Development has the potential for cumulative, secondary, and indirect effects. All interactions and cumulative effects have been addressed in Chapter 16 (Interactions) with cumulative effects and interactions fully addressed in the relevant specialist chapters of this EIAR.

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# 3 PLANNING AND POLICY CONTEXT

## 3.1 Introduction

This chapter considers the Proposed Development comprising of Large-Scale Residential Development in terms of legislative context and in relation to strategic, national, regional and local level planning policies and objectives, and other relevant statutory and non-statutory planning documents. National and regional plans and policies inform the policies and objectives of local authority Development Plans and of Local Area Plans which set the local statutory planning context.

### 3.1.1 Quality Assurance and Competence

This chapter has been prepared by Rachel Redmond, Environmental Consultant with DNV. Rachel has a Bachelor of Science (Hons) in Environmental Science from University College Cork. Rachel has worked as an Environmental Consultant with DNV since 2023 and has over 3 years of experience as an environmental consultant preparing Environmental Impact Assessment Reports of a similar scale and nature to the Proposed Development.

This chapter was reviewed by Grainne Ryan, Principal EIA Consultant at DNV. Gráinne is an Environmental Consultant with 11 years' experience, specialising in EIAs for strategic infrastructure, renewable energy, residential, industrial and pharmaceutical projects. Gráinne has a B.A, in Geography, Planning and Environmental Policy, an MSc in Environmental Policy and a Post Graduate Diploma in Project Management.

This chapter has been approved by Catherine Keogan, Technical Director and EIA Lead at DNV. Catherine is an environmental consultant with over 20 years' experience in consultancy, specialising in EIAs for large-scale residential and commercial developments, working closely with a range of developers, planning consultants and architects within the public and private sector.

### 3.1.2 Site Location

Please refer to Chapter 2 of this EIAR for a full description of the site.

In terms of planning and policy context the site is located at Rathmullan, Drogheda, Co. Meath.

County Meath is part of the eastern and midland region within the National Planning Framework (NPF). This region includes other counties such as Dublin, Louth, Kildare, Wicklow, Laois, Offaly, Westmeath and Longford, and focuses on balanced and sustainable pattern of development and a focus on employment, local infrastructure needs and addressing the rapid growth of the region.

The site is located within the administrative jurisdiction of Meath County Council and as such the Meath County Development Plan 2021-2027 sets out the policies and objectives for the site. The site is located adjacent to the Meath-Louth County border and therefore the Louth County Development Plan 2021 - 2027 has also been considered.

The site is currently zoned under the Meath County Development Plan 2021 – 2027 and is subject to two zoning objectives. The majority of the site is zoned as "*A2 New Residential -To*

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*provide for new residential communities with ancillary community facilities, neighbourhood facilities and employment uses as considered appropriate for the status of the centre in the Settlement Hierarchy".*

The remainder of the site to the north and west, adjacent to the Boyne Valley and M1 respectively is zoned as *"F1 Open Space -To provide for and improve open spaces for active and passive recreational amenities".*

A Site-Specific Flood Risk Assessment (SSFRA) was completed for the site by JBA Consulting in August 2025. The assessment confirms that the site is wholly located within Flood Zone C, indicating a low probability of flooding. This classification is based on a detailed review of historical flood data, predictive flood mapping, and site-specific conditions, including the disconnection of a former watercourse due to the construction of the M1 motorway. The SSFRA concludes that fluvial, coastal, and groundwater flood risks have been screened out, and that pluvial flood risk is low and can be effectively managed through proposed mitigation measures. The development is therefore considered appropriate for residential use in accordance with the Planning System and Flood Risk Management Guidelines.

## 3.2 European and National Policy and Legislation

Directive 2011/92/EU (as amended by Directive 2014 /52/EU) (together, the EIA Directive) was enacted as a means to assess the effects of projects on the environment, and to properly ensure that any potential significant effects are assessed before a project proceeds.

Article 1(2)(g) of Directive 2011/92/EU, as amended by Directive 2014/52/EU, defines Environmental Impact Assessment as a means of process consisting of:

*(i) the preparation of an environmental impact assessment report by the developer, as referred to in Article 5(1) and*

*(ii) the carrying out of consultations as referred to in Article 6 and, where relevant, Article 7;*

*(iii)* the examination by the competent authority of the information presented in the environmental impact assessment report and any supplementary information provided, where necessary, by the developer in accordance with Article 5(3), and any relevant information received through the consultations under Articles 6 and 7;

*(iv) the reasoned conclusion by the competent authority on the significant effects of the project on the environment, taking into account the results of the examination referred to in point (iii) and, where appropriate, its own supplementary examination; and (v) the integration of the competent authority's reasoned conclusion into any of the decisions referred to in Article 8a.'*

Annex 1 of the EIA Directive defines mandatory projects that require an Environmental Impact Assessment Report (EIAR) (formerly EIS) and Annex II of the EIA Directive lists projects which do not necessarily have significant effects but can be subject to case-by-case analysis or thresholds to be determined by member states.

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The EIA Directive requires the EIAR to identify, describe and assess, in an appropriate manner and in light of each individual case, the direct, indirect and cumulative significant effects of the Proposed Development on factors of the environment including:

*(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 (respectively, the Habitats Directive and the Birds Directive),*

*(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).*

The requirement for a statutory Environmental Impact Assessment (EIA) is set out in the mandatory and discretionary provisions of the Planning and Development Act, 2000 as amended (the Act) and in Schedule 5 of the Planning and Development Regulations, 2001 as amended (the Regulations).

Projects listed in Schedule 5, Part 1, of the Regulations, will be subject to mandatory assessment (Article 4(1) of Directive 2011/92/EU as amended by Directive 2014/52/EU (together, the EIA Directive)) as they are deemed to be projects which are likely to have a significant effect.

Other projects, listed in the Schedule 5, Part 2 of the Regulations, require an EIA (and the associated Environmental Impact Assessment Report (EIAR)) if it meets the thresholds or criteria listed therein. The competent authority retain discretion in respect of projects which do not meet these thresholds or criteria, (ie sub-threshold development) and may decide that an EIA (and the associated Environmental Impact Assessment Report (EIAR)) is required if it considers that the project is likely to have significant effects on the environment.

Section 172 of the Planning and Development Act 2001, as amended, provides the legislative basis for mandatory EIA. It states the following:

"*An environmental impact assessment shall be carried out by the planning authority or the Board, as the case may be, in respect of an application for consent for proposed development where either —*

*(a) the proposed development would be of a class specified in —*

*i) Part 1 of Schedule 5 of the Planning and Development Regulations 2001, and either*

*I) such development [ would equal or exceed, as the case may be, any relevant quantity, area or other limit specified in that Part, or*

*(II) no quantity, area or other limit is specified in that Part in respect of the development concerned,*

***or***

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*(ii) Part 2 [ (other than subparagraph (a) of paragraph 2)] of Schedule 5 of the Planning and Development Regulations 2001 and either —*

*(I) such development [ would equal or exceed, as the case may be, any relevant quantity, area or other limit specified in that Part, or*

*(II) no quantity, area or other limit is specified in that Part in respect of the development concerned,*

***or***

*(ii) Part 2 [ (other than subparagraph (a) of paragraph 2)] of Schedule 5 of the Planning and Development Regulations 2001 and either —*

*(I) such development [ would equal or exceed, as the case may be,] any relevant quantity, area or other limit specified in that Part, or*

*(II) no quantity, area or other limit is specified in that Part in respect of the development concerned,*

***or***

*(b) (i) the proposed development would be of a class specified in Part 2 of Schedule 5 of the Planning and Development Regulations 2001 but [ does not equal or exceed, as the case may be, ] the relevant quantity, area or other limit specified in that Part, and*

*(ii) it is concluded, determined or decided, as the case may be, —*

*(I) by a planning authority, in exercise of the powers conferred on it by this Act or the Planning and Development Regulations 2001 (S.I. No. 600 of 2001),*

*(II) by the Board, in exercise of the powers conferred on it by this Act orthose regulations,*

*(III) by a local authority in exercise of the powers conferred on it by regulation 120 of those regulations,*

*(IV) by a State authority, in exercise of the powers conferred on it by regulation 123A of those regulations,*

*(V) in accordance with section 13A of the Foreshore Act, by the appropriate Minister (within the meaning of that Act), or*

*(VI) by the Minister for Communications, Climate Action and Environment, in exercise of the powers conferred on him or her by section 8A of the Minerals Development Act 1940, that the proposed development is likely to have a significant effect on the environment."*

In some cases, Member States have also established "*exclusion"* or "*negative*" lists specifying thresholds and criteria below which EIA is never required or below which a simplified EIA procedure applies. There may be exceptions to the negative thresholds, for example, for projects in defined sensitive locations. Such exceptions will apply in the case of Habitats Directive

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92/43/EEC (as amended) assessments. The use of exclusion lists, defining thresholds below which EIA is never required, is very limited in the EU Member States.

Schedule 5 of the Planning and Development Regulations 2001, as amended outlines the legislative requirements deeming whether a project needs a mandatory EIA. Projects that automatically require an EIA included in Annex 1 of the EIA Directive are listed in Part 1 of Schedule 5 to the Planning and Development Regulations.

Projects that are assessed either on a case-by-case examination or on the basis of set mandatory thresholds are defined under Annex II of the EIA Directive, and these are transposed in Irish legislation in Schedule 5, Part 2 of the Planning and Development Regulations.

The Proposed Development falls below the thresholds set out in Class 10 of Part 2 of Schedule 5 of the Planning and Development Regulations 2001 (as amended) and is therefore considered a sub-threshold development for the purposes EIA, refer to Table 3-1 below. However, in accordance with Section 172 of the Planning and Development Act 2000 (as amended) and having regard to Schedule 7, the nature and location of the Proposed Development, together with the environmental sensitivity of the site, it was deemed appropriate to prepare and EIAR to support the planning application. Accordingly, an EIAR is submitted with this Planning Application.

*Table 3-1: Class of Activity as defined by Schedule 5, Part 2 (10) Infrastructure projects of the Planning and Development Regulations*

| Class of Activity as defined by Schedule 5, Part 2 (10) Infrastructure projects of the Planning and Development Regulations | Does the Proposed Development fall within this class of activity |
|---|---|
| (a) Industrial estate development projects, where the area would exceed 15 hectares | **No** |
| (b) (i) Construction of more than 500 dwelling units.<br>(ii) Construction of a car-park providing more than 400 spaces, other than a car-park provided as part of, and incidental to the primary purpose of, a development.<br>(iii) Construction of a shopping centre with a gross floor space exceeding 10,000 square metres.<br>(iv) Urban development which would involve an area greater than 2 hectares in the case of a business district, 10 hectares in the case of other parts of a built-up area and 20 hectares elsewhere. (In this paragraph, "business district" means a district within a city or town in which the predominant land use is retail or commercial use.) | **No**<br><br>i) The Proposed Development includes 249 no. residential units which is below the threshold of 500 units threshold.<br>ii) The Proposed Development includes 396 car parking spaces ancillary to the development and is below the threshold.<br>iii) The Proposed Development does not include for a shopping centre development.<br>iv) The site is approximately 9.2 hectares in size.<br><br>The site of the Proposed Development is located on the outskirts of a built-up area and therefore it is considered that the threshold of 10 hectares applies. |
| (c) All construction of railways and of intermodal transshipment facilities and of intermodal terminals not included in Part 1 of this Schedule which would exceed 15 hectares in area | **No** |
| d) All airfields not included in Part 1 of this Schedule with paved runways which would exceed 800 metres in length. | **No** |
| (dd) All private roads which would exceed 2000 metres in length. | **No** |

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| | |
|---|---|
| (e) New or extended harbours and port installations, including fishing harbours, not included in Part 1 of this Schedule, where the area, or additional area, of water enclosed would be 20 hectares or more, or which would involve the reclamation of 5 hectares or more of land, or which would involve the construction of additional quays exceeding 500 metres in length. | **No** |
| (f) (i) Inland waterway construction not included in Part 1 of this Schedule which would extend over a length exceeding 2 kilometres. (ii) Canalisation and flood relief works, where the immediate contributing sub-catchment of the proposed works (i.e. the difference between the contributing catchments at the upper and lower extent of the works) would exceed 100 hectares or where more than 2 hectares of wetland would be affected or where the length of river channel on which works are proposed would be greater than 2 kilometres. | **No** |
| (g) Dams and other installations not included in Part 1 of this Schedule which are designed to hold water or store it on a long-term basis, where the new or extended area of water impounded would be 30 hectares or more. | **No** |
| (h) All tramways, elevated and underground railways, suspended lines or similar lines of a particular type, used exclusively or mainly for passenger transport. | **No** |
| (i) Oil and gas pipeline installations and pipelines for the transport of CO2 streams for the purposes of geological storage (projects not included in Part 1 of this Schedule). | **No** |
| (j) Installation of overground aqueducts which would have a diameter of 1,000 millimetres or more and a length of 500 metres or more. | **No** |
| (k) Coastal work to combat erosion and maritime works capable of altering the coast through the construction, for example, of dikes, moles, jetties and other sea defence works, where the length of coastline on which works would take place would exceed 1 kilometre, but excluding the maintenance and reconstruction of such works or works required for emergency purpose. | **No** |
| (l) Groundwater abstraction and artificial groundwater recharge schemes not included in Part 1 of this Schedule where the average annual volume of water abstracted or recharged would exceed 2 million cubic metres. | **No** |
| (m) Works for the transfer of water resources between river basins not included in Part 1 of this Schedule where the annual volume of water abstracted or recharged would exceed 2 million cubic metre. | **No** |
| **Class of Activity as defined by Schedule 5, Part 2 (12) Tourism and Leisure of the Planning and Development Regulations** | **Does the Proposed Development fall within this class of activity** |
| (c) Holiday villages which would consist of more than 100 holiday homes outside built-up areas; hotel complexes outside built-up areas which would have an area of 20 hectares or more or an accommodation capacity exceeding 300 bedrooms. | **No** |

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| Class of Activity as defined by Schedule 5, Part 2 (13) Changes, extensions, development and testing, of the Planning and Development Regulations | Does the Proposed Development fall within this class of activity |
|---|---|
| (a) Any change or extension of development already authorised, executed or in the process of being executed (not being a change or extension referred to in Part 1) which would:- (i) result in the development being of a class listed in Part 1 or paragraphs 1 to 12 of Part 2 of this Schedule, and (ii) result in an increase in size greater than – - 25 per cent, or - an amount equal to 50 per cent of the appropriate threshold, whichever is the greater. | **No** |
| **Class of Activity as defined by Schedule 5, Part 2 (14) Works of Demolition** | **Does the Proposed Development fall within this class of activity** |
| Works of demolition carried out in order to facilitate a project listed in Part 1 or Part 2 of this Schedule where such works would be likely to have significant effects on the environment, having regard to the criteria set out in Schedule 7. | **Assessed under the EIAR.** |

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## 3.3 National Planning Framework

The National Planning Framework (NPF) is the Government's high-level strategic plan for shaping the future growth and development of Ireland to the year 2040. The NPF was revised in April 2025 to reflect updated population projections, policy priorities, and the need for more ambitious compact growth and climate action targets. The revised NPF is published together with a 10-year national investment plan as one vision – Project Ireland 2040, meaning that implementation of the Framework will be fully supported by the Government's investment strategy for public capital investment and investment by the State sector in general.

The National Development Plan (NDP) Review 2025, published in July 2025, sets out the Government's capital investment priorities to 2035, with a total investment of €275.4 billion. The NDP is closely aligned with the revised NPF and provides the funding framework to deliver on national objectives for housing, infrastructure, climate action, and balanced regional development. The NDP Review 2025 places a particular emphasis on accelerating the delivery of housing (targeting 300,000 new homes by 2030), upgrading water and energy infrastructure, and supporting sustainable transport and climate resilience. The NDP also introduces the Infrastructure, Climate and Nature Fund (ICNF) to support designated environmental projects and reforms to streamline infrastructure delivery.

Ireland 2040 includes a vision and strategy that is supported by a series of National Policy Objectives and will be aligned with the Government's ten-year National Investment Plan. The Strategy promotes:

- Compact Growth;
- Enhanced Regional Accessibility;
- Strengthened Rural Economies and Communities;
- Sustainable Mobility;
- A Strong Economy, supported by Enterprise, Innovation and Skills;
- High-Quality International Connectivity;

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- Enhanced Amenities and Heritage;
- Transition to a Low Carbon and Climate Resilient Society;
- Sustainable Management of Water, Waste and other Environmental Resources; and
- Access to Quality Childcare, Education and Health Services

A draft revision of The National Planning Framework has been undertaken to take account of changes that have occurred since it was published in 2018 and to build on framework that is in place.

In the period between 2022 and 2040, it is expected that there will be approximately an extra one million people living in Ireland.

The Eastern & Midland Regional Assembly (EMRA) outlines population projections in the Regional Spatial and Economic Strategy for the Eastern and Midland Region 2019-2031.For the eastern part of Ireland, which includes the site, it anticipates population growth of 759,000 – 777,000 people in 2026 and 789,000 – 831,500 people in 2031. It further outlines that "*key priorities are to promote the continued sustainable and compact growth of Drogheda as a regional driver of city scale with a target population of 50,000 by 2031" (EMRA, 2019).*

***National Policy Objective 1b***

*Eastern and Midland Region: 490,000 - 540,000 additional people, i.e. a population of around 2.85 million.*

***National Policy Objective 3a***

*Deliver at least 40% of all new homes nationally, within the built-up footprint of existing settlements.*

***National Policy Objective 3c***

*Deliver at least 30% of all new homes that are targeted in settlements other than the five Cities and their suburbs, within their existing built-up footprints.*

***National Policy Objective 4***

*Ensure the creation of attractive, liveable, well designed, high quality urban places that are home to diverse and integrated communities that enjoy a high quality of life and well-being.*

***National Policy Objective 6***

*Regenerate and rejuvenate cities, towns and villages of all types and scale as environmental assets, that can accommodate changing roles and functions, increased residential population and employment activity and enhanced levels of amenity and design quality, in order to sustainably influence and support their surrounding area.*

***National Policy Objective 7***

*Apply a tailored approach to urban development, that will be linked to the Rural and Urban Regeneration and Development Fund, with a particular focus on:*

- *Dublin;*
- *the four Cities of Cork, Limerick, Galway and Waterford;*

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- *Strengthening Ireland's overall urban structure, particularly in the Northern and Western and Midland Regions, to include the regional centres of Sligo and Letterkenny in the North-West, Athlone in the Midlands and cross-border networks focused on the Letterkenny-Derry North-West Gateway Initiative and Drogheda-Dundalk-Newry on the Dublin-Belfast corridor;*
- *Encouraging population growth in strong employment and service centres of all sizes, supported by employment growth;*
- *Reversing the stagnation or decline of many smaller urban centres, by identifying and establishing new roles and functions and enhancement of local infrastructure and amenities;*
- *Addressing the legacy of rapid unplanned growth, by facilitating amenities and services catch-up, jobs and/or improved sustainable transport links to the cities, together with a slower rate of population growth in recently expanded commuter settlements of all sizes;*
- *In more self-contained settlements of all sizes, supporting a continuation of balanced population and employment growth.*

***National Policy Objective 27***

*Ensure the integration of safe and convenient alternatives to the car into the design of our communities, by prioritising walking and cycling accessibility to both existing and proposed developments, and integrating physical activity facilities for all ages.*

***National Policy Objective 31***

*Prioritise the alignment of targeted and planned population and employment growth with investment in:*

- *A childcare/ECCE planning function, for monitoring, analysis and forecasting of investment needs, including identification of regional priorities;*
- *The provision of childcare facilities and new and refurbished schools on well-located sites within or close to existing built-up areas, that meet the diverse needs of local populations;*
- *The expansion and consolidation of Higher Education facilities, particularly where this will contribute to wider regional development, and*
- *Programmes for life-long learning, especially in areas of higher education and further education and training where skills gaps are identified.*

***National Policy Objective 32***

*To target the delivery of 550,000 additional households to 2040*

An assessment of the Proposed Development with regard to planning policies and legislation is detailed in the Planning Report prepared by Hughes Planning and Development Consultants (August, 2025), submitted separately as part of this application.

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## 3.4 Climate Action Policy

### 3.4.1 Climate Action Plan 2025

The Climate Action Plan 2025 outlines Ireland's statutory pathway to achieving a 51% reduction in greenhouse gas emissions by 2030 and climate neutrality by 2050, with a strong emphasis on the built environment, sustainable transport, and compact growth. The Proposed Development aligns with these objectives through the delivery of a residential scheme that supports modal shift via pedestrian and cyclist infrastructure and is located within proximity to public transport services including Drogheda Bus Station and MacBride Train Station. The scheme incorporates energy-efficient design principles, as detailed in the accompanying Energy Efficiency and Sustainability Report, and includes a provision of public open space (16.9% of the net site area), contributing to climate resilience and community wellbeing. The inclusion of a creche facility and the integration of native landscaping guided by the All-Ireland Pollinator Plan further reflect the development's commitment to sustainable placemaking. In this context, the scheme is considered consistent with the Climate Action Plan 2025 and broader Government policy on climate action and sustainable development.

### 3.4.2 Climate Action and Low Carbon Development Act 2015

Section 15 of the Climate Action and Low Carbon Development Act 2015 (as amended) places a legal obligation on all relevant bodies, including planning authorities, to perform their functions in a manner consistent with the objectives of the Government's climate action plans and strategies. In the context of planning, this means that the assessment and determination of planning applications must have regard to the need to reduce greenhouse gas emissions, increase climate resilience, and support the achievement of national climate targets.

## 3.5 Regional Spatial and Economic Strategy

The Regional Spatial and Economic Strategy (RSES) for the Eastern and Midland Region was adopted in January 2020. The Strategy is intended to:

- *Nurture all our places to realise their full potential;*
- *Protect and enhance our environment;*
- *Successfully combat climate change;*
- *Achieve economic prosperity and improved quality of life for all our citizens;*
- *Accommodate expanded growth and development in suitable locations; and*
- *Make the Southern Region one of Europe's most creative, innovative, greenest and liveable regions.*

Drogheda is included within the "Core Region" within the RSES which outline the growth enablers which include:

- *To promote continued growth at more sustainable rates, while providing for increased employment and improved local economies, services and functions to allow towns become more self-sustaining and to create the quality of life to attract investment.*
- *Drogheda to realise its potential to grow to city scale and secure investment to become a self-sustaining Regional Growth Centre on the Dublin-Belfast Economic Corridor, driving synergies between the Drogheda - Dundalk - Newry cross border network.*
- *Commensurate population and employment growth in Key towns, coupled with investment in enabling transport, infrastructure and services to facilitate the*

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*achievement of compact growth targets of at least 30% of all new homes to be within the existing built up area of settlements.*

- *'Catch up' investment to promote consolidation and improvement in the sustainability of those areas that have experienced significant population growth but have a weak level of services and employment for their residents.*
- *Diversification and specialisation of local economies with a focus on clustering, smart specialisation, place making and urban regeneration to create the quality of life to attract FDI and indigenous investment and increase high value knowledge-based employment including second site and relocation opportunities.*
- *Promote the Region for tourism, leisure and recreational activities including development of an integrated greenway network while ensuring that high value assets and amenities are protected and enhanced.*

## 3.6 Design Manual for Urban Roads and Streets (DMURS)

The Design Manual for Urban Roads and Streets which was adopted in 2013 and updated in 2022, sets out design guidance and standards for constructing new and reconfiguring existing urban roads and streets in Ireland. It also outlines practical design measures to encourage more sustainable travel patterns in urban areas. DMURS aims to end the practice of designing streets as traffic corridors, and instead focus on the needs of pedestrians, cyclists, and public transport users. Incorporating good planning and design practice and focus on the public realm, it also outlines practical design measures to encourage more sustainable travel patterns in urban areas.

The principal design guidance of DMURS has been considered in the design of the Proposed Development. A DMURS Statement and a Traffic and Transport Assessment, carried out by Waterman Moylan Consulting Engineers, accompany this planning application. Both consider that the Proposed Development is consistent with the principles and guidance outlined in the Design Manual for Urban Roads and Streets (DMURS).

## 3.7 Sustainable Residential Development and Compact Settlements Guidelines (2024)

The Sustainable Residential Development and Compact Settlements Guidelines (2023) provide national policy direction for the planning and delivery of new housing in Ireland. These guidelines emphasise the need for compact, sustainable growth by prioritising infill and brownfield development within existing built-up areas, especially in cities and larger towns. They encourage a greater diversity of housing types and support innovation in design, with a strong focus on placemaking, high-quality urban design, and the integration of green infrastructure. The guidelines set out recommended density ranges for different settlement types and locations, with higher densities promoted in central and accessible areas, and a flexible, context-sensitive approach elsewhere. Updated standards are provided for separation distances, open space, car and bicycle parking, and daylight, all aimed at supporting more efficient and sustainable forms of development.

The guidelines also reinforce the importance of aligning new development with sustainable mobility objectives, minimising car parking in accessible locations, and ensuring compliance with environmental and climate action requirements.

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## 3.8 Guidelines for Planning Authorities on 'The Planning System and Flood Risk Management (November 2009)'

The Planning System and Flood Risk Management Guidelines were published by the Minister for the Environment, Heritage & Local Government in November 2009 under Section 28 of the Planning & Development Acts 2000 to 2022.

The Planning System and Flood Risk Management Guidelines require the planning system at all levels to avoid development in areas at risk of flooding, particularly floodplains, unless there are proven wider sustainability grounds that justify appropriate development and where the flood risk can be reduced or managed to an acceptable level without increasing flood risk elsewhere; adopt a sequential approach to flood risk management when assessing the location for new development based on avoidance, reduction and mitigation of flood risk; and incorporate flood risk assessment into the process of making decisions on planning applications and planning appeals.

Details on how the Proposed Development supports and complies with the Planning System and Flood Risk Management Guidelines are detailed in the Site-Specific Flood Risk Assessment completed by JBA Consulting.

## 3.9 The Design Standards for Apartments, Guidelines for Planning Authorities (July 2025)

The Design Standards for Apartments, Guidelines for Planning Authorities (July, 2025) set national planning policy and guidance in relation to the planning and development of apartment schemes to take account of current Government policy and economic, social and environmental considerations. The Guidelines outline policies relating to:

- Apartment mix;
- Internal space standards for different types of apartments;
- Dual aspect ratios;
- Floor to ceiling heights;
- Apartments to stair/lift core ratios;
- Storage spaces; and
- Amenity spaces including balconies/patios.

Compliance with these standards is demonstrated within the Architectural Design Statement prepared by NDBA Architects, which accompanies the planning application. This section outlines how the proposed apartment units meet or exceed all relevant criteria, including apartment mix, minimum internal floor areas, dual aspect ratios, floor-to-ceiling heights, stair/lift core arrangements, storage provision, and private and communal amenity spaces. The design approach ensures a high standard of residential quality and aligns with national policy objectives for sustainable and inclusive urban development.

## 3.10 Urban Development and Building Heights - Guidelines for Planning Authorities (2018)

The Urban Development and Building Height Guidelines for Planning Authorities (2018) set out national planning policy to support increased building heights in appropriate urban locations, in line with the objectives of the National Planning Framework and Project Ireland 2040. These guidelines aim to promote more compact, sustainable forms of urban growth by

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encouraging higher-density development within existing built-up areas, particularly in city and town centres and areas well served by public transport.

The guidelines highlight the need to move away from restrictive height limits that can hinder innovation and sustainable development. Instead, they advocate for a performance-based approach to assessing building height, focusing on design quality, placemaking, and integration with the surrounding urban context.

Specific Planning Policy Requirements (SPPRs) within the guidelines require planning authorities to identify areas where increased building height will be actively pursued and to avoid blanket height restrictions. They also call for a mix of uses and building typologies, particularly in suburban and edge-of-town locations, to support more diverse and resilient communities.

The proposed development has been designed in accordance with these guidelines, supporting compact urban growth, efficient land use, and high-quality urban design outcomes.

## 3.11 Local Planning Policy

Under Section 9(1) of the Planning and Development Act 2000, as amended, every planning authority is obliged to make a development plan every six years. The Meath County Development Plan 2021 – 2027 is the current statutory plan for the region, against which planning applications will be considered.

Section 10(1) of the Planning and Development Act 2000, as amended, states that the purpose of a development plan is to set out "an overall strategy for the proper planning and sustainable development" in a particular functional area.

### 3.11.1 Meath County Development Plan 2021 - 2027

The Core Strategy Vision for the Meath County Development Plan 2021 - 2027 is:

*To continue to support the creation of socio-economically progressive vibrant, dynamic, and healthy communities throughout the County and ensure that future growth is based on the principles of sustainable development that delivers a high-quality living and working environment that meets the needs of all residents, in accordance with National and Regional Guidance.*

The Meath County Development Plan 2021 – 2027 sets the land use zoning objectives and uses that would be permissible in principle and/or open for consideration within each land use.

The site is zoned as "*A2 New Residential -To provide for new residential communities with ancillary community facilities, neighbourhood facilities and employment uses as considered appropriate for the status of the centre in the Settlement Hierarchy*".

The remainder of the site to the north and west, adjacent to the Boyne Valley and M1 respectively is zoned as "*F1 Open Space -To provide for and improve open spaces for active and passive recreational amenities''*.

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#### *3.11.1.1 Settlement Strategy*

Chapter 3 of the Meath County Development Plan 2021 – 2027 outlines the Settlement and Housing Strategy, of which the following settlement strategy policies are relevant to the Proposed Development.

***SH POL 1***

*To ensure that all settlements, in as far as practicable, develop in a self-sufficient manner with population growth occurring in tandem with the provision of physical and social infrastructure*

***SH POL 3***

*To support the creation of healthy and sustainable communities that encourages and facilitates walking and cycling and general physical activity through the implementation of best practices in urban design that promotes permeability and interconnecting spaces.*

Additionally, the following settlement strategy objectives are relevant to the Proposed Development

***SH OBJ 1***

*To ensure that sufficient zoned lands are available to satisfy the housing requirements of the County over the lifetime of the Plan.*

***SH OBJ 2***

*To ensure the implementation of the population and housing growth allocations set out in the Core Strategy and Settlement Strategy.*

***SH OBJ 5***

*The existing Southern Environs of Drogheda Local Area Plan 2009 (The LAP) shall remain the statutory plan for the Southern Environs of Drogheda until such a time as it is replaced with a Joint Urban Plan for Drogheda in conjunction with Louth County Council having regard to the requirements of the Report of the Drogheda Boundary Review Committee (February 2017), the National Planning Framework, and the Eastern and Midland Region Regional Spatial and Economic Strategy (2019-2031). This plan shall be read together with the County Development Plan 2021-2027. The County Development Plan 2021-2027 shall take precedence if a conflict arises between the Plans and the conflicting provision of the LAP shall cease to have effect.*

***SH OBJ 6***

*To prepare a Joint Vision and Urban Area Plan for Drogheda in partnership with Louth County Council within the lifetime of this Plan in accordance with the requirements of Regional Policy Objective 4.11 of the RSES for the Eastern and Midland Region.*

***SH OBJ 8***

*To develop Navan and the Southern Environs of Drogheda as the primary development centres in Meath and to continue to promote Dunboyne as a key settlement in the Metropolitan Area of Dublin. The long-term growth of these*

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*settlements shall be based on principles of balanced and sustainable development that support a compact urban form and the integration of land use and transport.*

### *3.11.1.2 Housing strategy*

The following housing strategy policies are relevant to the Proposed Development:

***SH POL 5***

*To secure a mix of housing types and sizes, including single storey properties, particularly in larger developments to meet the needs of different categories of households.*

Additionally, the following housing strategy objectives are relevant to the Proposed Development:

***SH OBJ 12***

*To secure the implementation of the Meath Housing Strategy 2020-2026.*

### *3.11.1.3 Housing Development*

Housing Development Policies with regard to density are outlined within Chapter 3. The policies that are relevant to the Proposed Development are as follows:

***SH POL 7***

*To encourage and foster the creation of attractive, mixed use, sustainable communities that include a suitable mix of housing types and tenures with supporting facilities, amenities, and services that meet the needs of the entire community and accord with the principles of universal design, in so far as practicable.*

***SH POL 8***

*To support the creation of attractive residential developments with a range of housing options and appropriate provision of functional public and private open space that is consistent with the standards and principles set out in the Sustainable Residential Development and Compact Settlements Guidelines (2024), the associated Urban Design Manual and any subsequent Guidelines.*

***SH POL 9***

*To promote higher residential densities in appropriate locations and in particular close to town centres and along public transport corridors, in accordance with the Sustainable Residential Development and Compact Settlement Guidelines (2024).*

***SH POL 10***

*To require that applications for residential development take an integrated and balanced approach to movement, place making, and streetscape design in accordance with the requirements of the Design Manual for Urban Roads and Streets, DTTS and DECLG (2013 and updated in 2019).*

***SH POL 13***

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*To require that all new residential developments shall be in accordance with the standards set out in the Development Management Standards and Land Use Zoning Objectives set out in Chapter 11 of this Plan, in so far as is practicable.*

Additionally, the following housing development objectives are relevant to the Proposed Development:

***SH OBJ 22***

*The Planning Authority will require the provision of between 15-30% of dwellings and apartments in new residential developments of ten units or more to be Age Friendly Lifetime Adaptable Homes, suitable to accommodate or adaptable to provide accommodation for people with disabilities and older people in accordance with the requirements of the 'Housing Options for Our Ageing Population Policy Statement' (2019), published by the Department of Housing, Planning and Local Government and the Department of Health and 'Building for Everyone: A Universal Design', 'Universal Design Guidelines for Homes in Ireland' developed by the Centre for Excellence in Universal Design (National Disability Authority) and section 11.5.29 of this Plan. Planning applications will be required to demonstrate compliance with this objective, and to show an accessible route to the residential units from the boundary of the property. Proximity and access to local services must also be considered relative to the units which are accessible. A universal design statement shall be provided as part of all new planning applications to demonstrate this requirement.*

***SH OBJ 23***

*To require that all new residential development applications of 50 units or more are accompanied by a Social Infrastructure Assessment (SIA) to determine if social and community facilities in the area are sufficient to provide for the needs of the future residents in accordance with the requirements of policy SOC POL 6 in the 'Community Building Strategy' (Chapter 7).*

***SH OBJ 24***

*Meath County Council recognises the importance of social inclusion and will require 30% of social housing to be fully accessible and built with a universal design approach which will mean that the property will be flexible and can be changed as needed over the course of the occupants lifetime.*

### 3.11.2 Louth County Development Plan 2021 – 2027

The site is adjacent to the border between Meath and Louth, and therefore the Louth County Development Plan 2021 – 2027 has also been considered.

#### *3.11.2.1 Core Settlement and Settlement Strategy*

Chapter 2 of the Louth County Development Plan 2021 – 2027 outlines the Core Settlement and Settlement Strategy. The policies set out within this chapter that are relevant to the Proposed Development include:

***CS 4***

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*To support the development of identified growth centres of Dundalk and Drogheda, as focal points for regional critical massing and employment growth.*

***SS 2***

*To facilitate the development of Dundalk and Drogheda and to maintain their positions at the top of the settlement hierarchy*

***SS 4***

*To review the Drogheda Borough Council Development Plan 2011-2017 and to prepare a Local Area Plan for Drogheda and Environs which will be consistent with the provisions of the County Plan.*

***SS 5***

*To ensure that the expansion of Drogheda to include the Northern Environs, takes place in an orderly and sustainable fashion that will support the growth of Drogheda and not detract from the vitality and viability of its town centre*

***SS 59***

*To require that access to the public road will not prejudice road safety or significantly inconvenience the flow of traffic by demonstrating compliance with the appropriate visibility and traffic safety standards as set down in Section 7.3.6 of the Plan.*

***SS 60***

*To require that new accesses are located so as to minimise the impact on existing roadside boundaries.*

***SS 63***

*To require that new accesses are located having regard to both road safety and the protection of existing roadside hedgerows, trees and boundaries.*

***SS 64***

*To require, where it is necessary to modify or remove the existing roadside boundary in the interest of traffic safety, that the new boundary is located behind the visibility sight line and that a new boundary consistent with the nature and character of the area is planted behind the visibility sight line.*

#### *3.11.2.2 Residential and Community Facilities*

Chapter 4 of the Louth County Development 2021 – 2027 outlines the Residential and Community Facilities. The policies set out within this chapter that are relevant to the Proposed Development include:

***RES 1***

*It is the policy of Louth County Council to ensure compliance with the Housing Strategy and to facilitate the provision of housing units to sufficiently cater for social and specialist housing needs as identified in the Housing Strategy over the Plan period.*

***RES 2***

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*It is the policy of the Council to enable every household to have available an affordable dwelling of good quality, suited to its needs, in a good environment and, as far as possible, at the tenure of its choice.*

***RES 4***

*Require that 12% of all private residential development on lands zoned for residential or mixed uses (where residential is included) be provided for social /and or specialist housing under the provisions of Part V of the Planning Acts*

***RES 10***

*To ensure all new residential developments are consistent with the guidelines and best practice manuals issued by the DECLG in the planning for and provision of sustainable communities within new residential areas.*

***RES 12***

*To encourage developers to provide for a mixture of housing types and sizes within residential development including single storey units to create sustainable balanced communities.*

***RES 13***

*To encourage developers to provide for a mixture of housing types and sizes thereby creating visual variety and preventing residential developments that are homogenous in character.*

***RES 15***

*To require that master plans and planning applications for residential developments identify where appropriate, pedestrian and cycle paths within the site and externally to adjoining residential areas, existing services and community facilities*

***RES 20***

*To require that in all new residential development that the quantitative public open space standards as set out in Table 4.4 and the qualitative requirements of Section (4.9.3.1) described above are adhered to unless otherwise provided for in any local area plan.*

***RES 22***

*To ensure that no area of public open space is less than 200sqm in area and no boundary is less than 10 meters in length.*

***RES 38***

*To require applications for residential developments on sites of one hectare or over (excluding Level 4) or for more than 50 residential units, provide an audit of existing community facilities in the locality and where a shortfall in facilities exist, demonstrate how this will be made good, either through provision on site or such other means as is acceptable to the Council.*

***RES 43***

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*To ensure that adequate and suitable childcare facilities are provided having regard to DECLG Childcare Facilities Guidelines for Planning Authorities 2001. Creche/childcare facilities shall locate in settlements contained within Level's 1, 2, 3 and 4 and will not generally be permitted in the open countryside.*

### 3.11.3 Drogheda Local Area Plan

It is noted that the Joint Drogheda Local Area Plan was discussed at the Section 32 Consultation and is referred to within the Meath and Louth County Development Plans. It is noted that there has been no further update with regards to the Joint Drogheda Local Area Plan.

Accordingly, there is no commentary provided on these documents in this chapter.

## 3.12 Conclusion

Having regard to the policies and objectives of

- European and National Policy
- National Planning Framework
- Regional and Spatial and Economic Strategies
- Meath County Development Plan
- Louth County Development Plan

It is considered that the Proposed Development complies with the relevant national and regional and local planning policy context. As such, it is considered that the Proposed Development supports and accords with the proper planning and sustainable development of the area.

## 3.13 References

Design Standards for Apartments, Guidelines for Planning Authorities (July 2025)

Directive 2011/92/EU, as amended by Directive 2014/52/EU (the EIA Directive)

Guidelines for Planning Authorities on The Planning System and Flood Risk Management (Department of the Environment, Heritage and Local Government, 2009)

Louth County Development Plan 2021–2027

Meath County Development Plan 2021–2027

National Development Plan Review 2025

National Planning Framework (Project Ireland 2040)

National Planning Framework (First Revision, April 2025)

Planning and Development Act 2000, as amended

Planning and Development Regulations 2001, as amended

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Regional Spatial and Economic Strategy for the Eastern and Midland Region (EMRA, 2019)

Sustainable Residential Development and Compact Settlements Guidelines for Planning Authorities (2024)

Urban Development and Building Heights – Guidelines for Planning Authorities (2018)

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# 4 POPULATION AND HUMAN HEALTH

## 4.1 Introduction

This chapter considers the potential effects of the Proposed Development on human beings, living, working and visiting in the vicinity of the site. The chapter details the potential direct and indirect effects of the Proposed Development on the local population and human health.

The section on Population and Human Health is broad ranging and covers the existence, wellbeing, and activities of people through the format of considering people as 'groups' or 'populations'. The assessment of impacts on human beings involves the identification of relevant key populations that may be affected by the proposal and quantifiable documentary research. Health, as defined by the World Health Organization (WHO), is "*a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity*" (WHO, 2022).

Key populations have been identified as persons residing and engaging in activities near the site, persons with a stake in the general economy of the local and regional area, and persons enjoying the recreational and cultural amenities of the area.

### 4.1.1 Quality Assurance and Competency of Experts

This chapter was prepared by Rachel Redmond, Environmental Consultant with DNV. Rachel has a BSc (Hons) in Environmental Science from University College Cork. She has over three years professional experience as an Environmental Consultant, preparing EIA Screening Reports and a range of chapters for EIARs of a similar scale and nature to the Proposed Development.

This chapter has been reviewed by Michelle Gaffney Senior EIA consultant with DNV. Michelle has over four years' experience in environmental consultancy. She holds a B.A (Hons) in Earth Science from Trinity College Dublin and is currently advancing expertise through an MSc in Environmental Sustainability at University College Dublin. Michelle has been involved in the technical input into a range of Environmental Impact Assessment Report Chapters and has been involved in the project management and delivery of a range of EIARs of a similar scale and nature to the Proposed Development.

This chapter has been approved by Catherine Keogan, Technical Director and EIA Lead at DNV. Catherine is an environmental consultant with 37 years' experience in consultancy, specialising in EIAs for large-scale residential, commercial developments, pharmaceutical, BESS and solar projects working closely with a range of developers, planning consultants and architects within the public and private sector. Catherine has a B.Sc. (Hons) in Analytical Science and a Post Graduate Diploma in Renewable Energy Technology Systems.

## 4.2 Study Methodology

A desk-based study was undertaken in July 2025 to assess the information regarding population, population trends and human health within the vicinity of the Proposed Development. This study was based on the relevant published policy documents and undertaken in accordance with the following guidance:

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- Guidelines on the information to be contained in Environmental Impact Assessment Reports, EPA (2022);
- EIA Guide to Effective Scoping of Human Health, IEMA (2022);
- EIA Guide to Determining Significance for Human Health, IEMA (2022); and,
- Institute of Public Health (IPH) (2021) Health Impact Assessment Guidance.

The 2022 Census of Ireland was held on Sunday 3rd April 2022. The preliminary results were released on 23rd June 2022, with the remaining results being published over several months starting in April 2023.

The scope of this evaluation is based on a review of data available from the Central Statistics Office (CSO), legislation, guidance documents and EIARs. The aim of the study was to assess the current baseline environment.

The potential effects of the Proposed Development on the local population are assessed in this EIAR in relation to:

- Population demographics;
- Socio economic impacts;
- Water quality;
- Air quality;
- Noise and vibration;
- Traffic and transport; and,
- General amenity and tourism.

In accordance with the IPH (2021) guidance, "Health Impact Assessment Guidance" the sensitivity of the local population was determined following the methodology set out in Part 4 and as summarised in the Health Sensitivity: Conceptual Model presented in Figure 4-2 below.

The sensitivity of the population was considered taking into account the following indicative criteria as included in the IEMA (2022) "EIA Guide to Determining Significance for Human Health" guidance:

- Deprivation;
- Resource sharing;
- Inequalities;
- Community outlook;
- Daily activities;
- Dependencies;
- Health status; and
- Adaptability.

In addition, the health magnitude of effects was considered, taking into account the indicative criteria set out in the IEMA (2022) "EIA Guide to Determining Significance for Human Health' guidance":

- Scale;
- Duration;
- Frequency;
- Severity;

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- Extent;
- Reversibility of the effect; and
- Health services quality implication.

### 4.2.1 Study Area

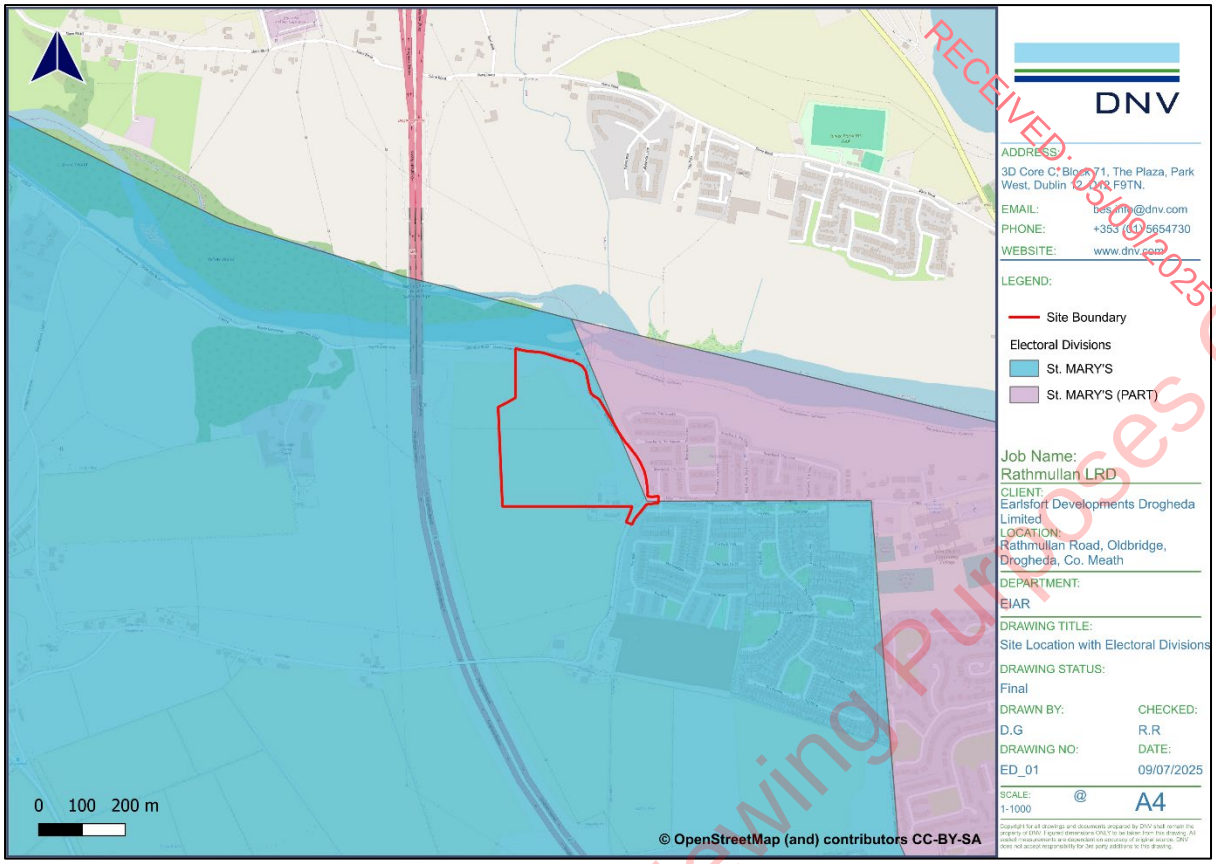
A comprehensive description of the proposed development is presented in Chapter 2 of this EIAR.

No formal national guidance is available on the appropriate study area to focus the assessment of population and human health. As such, professional judgement has been applied in determining the appropriate study areas. Due to the wide reaching and often transient nature of people, the potential effects of the Proposed Development can be experienced at different scales. For example, the impact of air quality on human health will be experienced at a much smaller radius when compared to socio-economic impact which can be experienced at a community or regional level.

When choosing an appropriate study area for the potential effects on population and human health in this chapter, the extent of the area assessed varies. In order to assess baseline population and human health conditions in the wider area, Electoral Divisions (EDs) have been considered. ED's are the smallest legally defined administrative areas in the State and therefore they were selected as the spatial unit for this assessment. ED's provide the most detailed and locally relevant demographic data available from the CSO. This allows for a more accurate analysis of population characteristics and potential human health impacts in the immediate vicinity of the proposed development, while also aligning with the spatial units commonly used in planning policy and public health reporting.

When assessing the socio-economic and population demographic effects, the study area consisting of the St. Mary's ED in which the site is located, and the adjacent St. Mary's (Part) ED have been assessed. For all other effects, specific sensitive receptors have been identified.

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*Figure 4-1 Study Area*

### 4.2.2 Information Sources

The principal sources of information are as follows:

- Census and employment information published by the Central Statistics Office (CSO);
- Meath County Development Plan 2021 – 2027;
- Louth County Development Plan 2021 – 2027;
- Ordinance Survey Ireland (OSI) mapping and aerial photography.

The IPH has issued a document “Health Impact Assessment Guidance” (2021) which details the link between human health and the built environment (Figure 4-2). This document also details the negative health impacts associated with unemployment. Unemployment affects both physical and mental health and is an important determinant of health inequalities in adults of working age. Unemployed people have a higher risk of lower levels of psychological wellbeing ranging from symptoms of depression and anxiety to self-harm and suicide. Unemployment can also impact other health determinants for example housing and nutrition. Based on this information, employment generated as a result of the Proposed Development has been assessed throughout this chapter.

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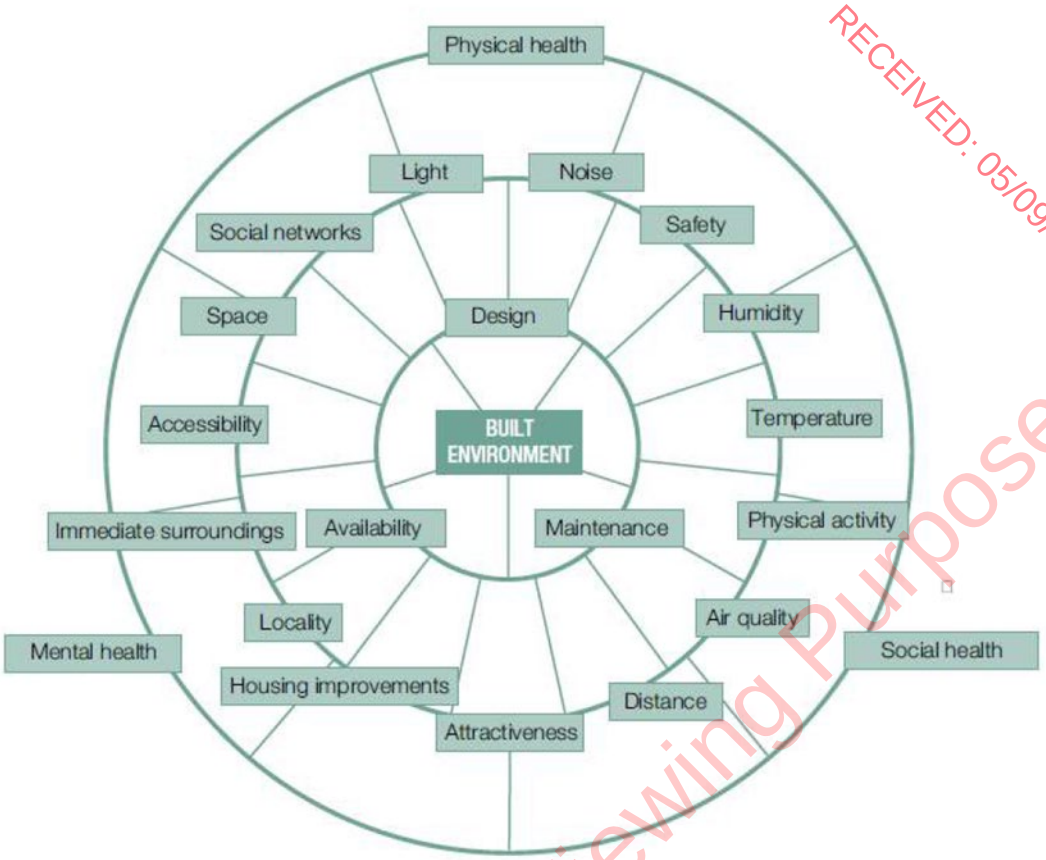



*Figure 4-2: Health Impact of the Built Environment (source: Institute of Public Health in Ireland)*

The European Commission (EC) has published the "Guidance on The Preparation of The Environmental Impact Assessment Report" (EC, 2017). This document defines human health as "*a very broad factor that would be highly Project dependent. The notion of human health should be considered in the context of other factors in Article 3(1) of the EIA Directive and thus environmentally related health issues (such as health effects caused by the release of toxic substances to the environment, health risks arising from major hazards associated with the Project, effects caused by changes in disease vectors caused by the Project, changes in living conditions, effects on vulnerable groups, exposure to traffic noise or air pollutants) are obvious aspects to study".*

Technical chapters within the EIAR have also been reviewed when assessing the likely effects on population and human health. These include the relevant chapters relating to air quality, climate, noise and vibration, hydrology, traffic and transport and landscape and visual.

In line with the Environmental Protection Agency (EPA) "Guidelines on the information to be contained in Environmental Impact Assessment Reports" (2022) (the EPA Guidelines (EPA, 2022)), the terms defined when quantifying the quality of effects, are as outlined in Chapter 1.

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## 4.3 The Existing and Receiving Environment (Baseline Situation)

### 4.3.1 Population and Demographic Analysis

The most recent population figures published by the Central Statistics Office (CSO), indicate that the combination of a net inward migration and high birth rates have resulted in the population of the 26 counties of the State having exceeded five million for the first time since 1851. Population projections for the State up to 2046, anticipate a population of approximately five million under the most pessimistic scenario and over 6.7 million under the most optimistic scenario.

### 4.3.2 Population and Age

Table 4-1 sets out the age groups across the population in the study area (CSO, 2022).

St. Mary's ED

St. Mary's ED has a notably youthful population, with 29.9% aged 5–24, higher than the national average (26.4%). The proportion of children aged 0-4 is also elevated (7.4%). Older age groups (65+) are underrepresented, with only 8.8% aged 65 or older compared to 15.1% nationally. This suggests a low age dependency ratio and a population likely to be economically active.

St. Mary's (Part) ED

This area also shows a youthful profile, with 31.9% aged 5 - 24 which is the highest among all areas assessed. However, the 25-34 age group is lower than average (10.1% vs. 12.2% nationally), and the 65+ population is even smaller than in St. Mary's ED (8.7%). This indicates a strong presence of school-age individuals but fewer older adults.

County Meath

County Meath mirrors the national age distribution closely, with 29.1% aged 5–24 and 12.7% aged 65+. It has a balanced demographic, suggesting a mix of working-age and dependent populations.

County Louth

County Louth has a slightly older population than Meath, with 14.2% aged 65+, and a lower proportion of young children (5.9%). This may imply greater demand for age-related services and healthcare.

State

Nationally, the population is more evenly distributed, with 26.4% aged 5–24 and 15.1% aged 65+. Compared to the state, both St. Mary's ED and St Mary's (Part) ED have younger populations and lower proportions of older adults.

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*Table 4-1: Age Groups in the Study Areas, County Meath, County Louth and the State (CSO, 2022)*

| Age Range | St. Mary's ED | | St. Mary's (Part) ED | | County Meath | | County Louth | | State | |
|---|---|---|---|---|---|---|---|---|---|---|
| | No. of People | % of People | No. of People | % of People | No. of People | % of People | No. of People | % of People | No. of People | % of People |
| 0-4 years | 1,218 | 7.4 | 367 | 5.4 | 14,217 | 6.4 | 8,260 | 5.9 | 295,415 | 5.7 |
| 5-24 years | 4,911 | 29.9 | 2,153 | 31.9 | 64,245 | 29.1 | 39,202 | 28.1 | 1,361,643 | 26.4 |
| 25-34 years | 1,985 | 12.1 | 682 | 10.1 | 23,529 | 10.7 | 15,687 | 11.2 | 628,031 | 12.2 |
| 35-44 years | 3,032 | 18.5 | 1,027 | 15.2 | 35,622 | 16.1 | 21,124 | 15.1 | 794,393 | 15.4 |
| 45-54 years | 2,493 | 15.2 | 1,156 | 17.1 | 32,979 | 14.9 | 20,119 | 14.4 | 713,507 | 13.9 |
| 55-64 years | 1,322 | 8.1 | 780 | 11.6 | 23,175 | 10.5 | 15,413 | 11.0 | 579,835 | 11.3 |
| 65-74 years | 753 | 4.6 | 381 | 5.6 | 16,050 | 7.3 | 11,233 | 8.0 | 441,028 | 8.6 |
| 75 years and over | 689 | 4.2 | 208 | 3.1 | 11,009 | 5.0 | 8,665 | 6.2 | 335,287 | 6.5 |
| Total | 16,403 | | 6,754 | | 220,826 | | 139,703 | | 5,149,139 | |

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In summary, the age profile across the study area indicates a predominantly young and economically active population, particularly in St. Mary's ED and St. Mary's (Part) ED. This demographic structure suggests a strong potential workforce and a lower demand for age-related health and social services. Compared to County Meath, County Louth, and the national average, the study areas have a lower proportion of older adults and a higher proportion of school-age and early working-age individuals. This positions the study area well to benefit from employment opportunities and community infrastructure associated with the Proposed Development, while also highlighting the importance of ensuring adequate educational and recreational facilities for younger residents.

### 4.3.3 Economic Activity and Employment

The labour force is defined as the number of people above the legal working age that are available to work. Table 4-2 shows the percentage of the population who were in the labour force during the 2022 census.

St. Mary's ED

This area has a high employment rate (63.4%), well above the national average (56.1%). Unemployment in the area is considered to be low, and the proportion of retired individuals (10.8%) is below the national figure (15.9%). This reflects a strong labour force and low dependency.

St. Mary's (Part) ED

Employment is slightly lower (55.8%) and long-term unemployment is higher (4.0%) than in St. Mary's ED and nationally (2.6%). This suggests some economic vulnerability despite a youthful population.

County Meath

County Meath has a healthy employment rate (59.3%) and a low unemployment rate of 3.9%. Retirement levels (13.2%) are moderate, indicating a balanced economic profile.

County Louth

County Louth shows a lower employment rate (34.7%) and higher retirement (10.1%) and disability rates (3.4%). This suggests a more economically dependent population and potential challenges in workforce engagement.

State

Nationally, 56.1% are at work, with 15.9% retired and 4.6% unable to work due to disability. Compared to this, St. Mary's ED stands out as economically strong, while St. Mary's (Part) ED and Louth show more mixed indicators.

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*Table 4-2: Principal Economic Status (CSO, 2022)*

| Principle Economic Status | St. Mary's ED | | St. Mary's (Part) ED | | County Meath | | County Louth | | State | |
|---|---|---|---|---|---|---|---|---|---|---|
| | No. of People | % of People | No. of People | % of People | No. of People | % of People | No. of People | % of People | No. of People | % of People |
| At work | 7,763 | 63.4 | 2,960 | 55.8 | 101,189 | 59.3 | 59,140 | 34.7 | 23,202,97 | 56.1 |
| Looking for first regular job | 111 | 0.9 | 76 | 1.4 | 1,373 | 0.8 | 1,265 | 0.7 | 34,526 | 0.8 |
| Short term unemployed | 198 | 1.6 | 105 | 2.0 | 2,753 | 1.6 | 2,157 | 1.3 | 70,217 | 1.7 |
| Long term unemployed | 236 | 1.9 | 210 | 4.0 | 3,998 | 2.3 | 3,820 | 2.2 | 106,059 | 2.6 |
| Student | 1,385 | 11.3 | 721 | 13.6 | 19,188 | 11.3 | 12,583 | 7.4 | 459,275 | 11.1 |
| Looking after home/family | 762 | 6.2 | 346 | 6.5 | 12,243 | 7.2 | 7,888 | 4.6 | 272,318 | 6.6 |
| Retired | 1,327 | 10.8 | 553 | 10.4 | 22,441 | 13.2 | 17,245 | 10.1 | 657,790 | 16.0 |
| Unable to work due to permanent sickness or disability | 387 | 3.2 | 294 | 5.5 | 6,325 | 3.7 | 5,740 | 3.4 | 189,308 | 4.6 |
| Other | 69 | 0.6 | 40 | 0.8 | 1,084 | 0.6 | 771 | 0.5 | 2,7062 | 0.7 |
| **Total** | 12,238 | | 5,305 | | 170,594 | | 110,609 | | 4,136,852 | |

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The economic profile of the study area reflects a generally strong and balanced structure, with indicators suggesting both economic vitality and demographic diversity. St. Mary's ED shows particularly high employment rates and low levels of unemployment and retirement. St. Mary's (Part) ED shows slightly higher unemployment and disability rates, suggesting some localised socio-economic challenges. County Meath reflects a balanced economic structure, while County Louth shows lower employment and higher dependency indicators. While unemployment may be considered a negative socio-economic indicator, retirement and disability rates are more appropriately viewed as reflective of demographic and health characteristics. Their inclusion in this assessment supports a broader understanding of population structure and service needs, rather than implying economic disadvantage. Overall, the Proposed Development is likely to have a beneficial impact on the local economy, particularly during the construction phase, by supporting job creation and reinforcing the area's existing strong labour force participation.

The closest social welfare office to the Proposed Development is the Drogheda Intreo Centre which covers the following areas: Drogheda, Tullyallen, Monasterboice, Dunleer (parts of), Termonfeckin, Clogherhead, Togher, Baltray, Beaulieu, Bettystown, Laytown, Mornington, Julianstown, Bellewstown, Donore, Duleek and areas of Ardcath whose nearest post office is Duleek, Rural areas of Slane whose nearest Post Office is Drogheda (not Slane village).

Table 4-3 shows the industries the people in the study areas work.

St. Mary's ED

Commerce and trade (26.8%) and professional services (26.1%) are the most common industries that people work in, with transport and communications following (10.7%). Agriculture forestry and fishing as a profession is low (0.5%) which reflects an urban or suburban character.

St. Mary's (Part) ED

Similar to St. Mary's ED, with commerce (26.3%) and professional services (26.2%) being the leading professions in the area. Manufacturing is slightly higher in this area (10.9%), and agriculture, forestry and fishing remains low (0.57%).

County Meath

County Meath has a diverse employment base, with higher representation in agriculture, forestry and fishing (3.6%) and building and construction (8.3%). Commerce and professional services are also prominent at 25%.

County Louth

County Louth shows a similar pattern to County Meath in areas of work but with slightly higher representation in manufacturing (12%) and lower in agriculture (2%).

State

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Nationally, commerce (23.8%) and professional services (24.5%) are dominant. St. Mary's ED and St. Mary's (Part) ED exceed these averages, indicating a strong service-oriented economy.

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*Table 4-3 Industry in which People Work in the Study Areas, County Meath, County Louth and the State (CSO, 2022)*

| Industry | St. Mary's ED | | St. Mary's (Part) ED | | County Meath | | County Louth | | State | |
|---|---|---|---|---|---|---|---|---|---|---|
| | No. of People | % of People | No. of People | % of People | No. of People | % of People | No. of People | % of People | No. of People | % of People |
| Agriculture, forestry and fishing | 35 | 0.5 | 17 | 0.6 | 3,598 | 3.6 | 1,194 | 2.0 | 82,228 | 3.5 |
| Building and construction | 412 | 5.3 | 157 | 5.3 | 8,350 | 8.3 | 3,454 | 5.8 | 134,482 | 5.8 |
| Manufacturing industries | 830 | 10.7 | 322 | 10.9 | 11,414 | 11.3 | 7,076 | 12.0 | 273,102 | 11.8 |
| Commerce and trade | 2,080 | 26.8 | 777 | 26.3 | 25,312 | 25.0 | 14,939 | 25.3 | 552,642 | 23.8 |
| Transport and communications | 1,050 | 13.5 | 302 | 10.2 | 10,166 | 10.1 | 4,812 | 8.1 | 212,383 | 9.2 |
| Public administration | 424 | 5.5 | 170 | 5.7 | 6,190 | 6.1 | 3,226 | 5.5 | 131,639 | 5.7 |
| Professional services | 2,026 | 26.1 | 775 | 26.2 | 23,223 | 23.0 | 14,962 | 25.3 | 568,105 | 24.5 |
| Other | 906 | 11.7 | 440 | 14.9 | 12,936 | 12.8 | 9,477 | 16.0 | 365,716 | 15.8 |
| **Total** | 7,763 | | 2,960 | | 101,189 | | 59,140 | | 2,320,297 | |

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Employment in the study areas are concentrated in commerce, professional services, and manufacturing, with minimal reliance on agriculture. This aligns with national trends and reflects the area's sub-urban character. The similarity in employment sectors between the study area and the national profile suggests a resilient and adaptable workforce. This similarity indicates that the local workforce is engaged in a diverse range of mainstream sectors such as commerce, professional services, and manufacturing, which are less vulnerable to sector-specific downturns. It also suggests that the skills and qualifications of the population are aligned with national economic trends, supporting adaptability to future employment opportunities. The Proposed Development is unlikely to disrupt this balance and should instead support local economic diversification, particularly through indirect employment in construction, retail, and services.

In relation to education, the following is observed and is outlined in Table 4-4 below.

St. Mary's ED

St. Mary's ED demonstrates a strong educational profile. Only 6.2% of residents have primary education or less, and just 1.4% have no formal education, both of which are below national averages. A combined 28.2% of residents hold an honours bachelor's degree or higher, which is above the national average of 24.5%. This suggests a well-educated population with strong potential for skilled employment.

St. Mary's (Part) ED

This area shows slightly lower educational attainment. While 21.6% of residents hold an honours bachelor's degree or higher, this is below both the national and St. Mary's ED averages. The proportion of residents with lower secondary education (13.7%) and no formal education (2.7%) is higher than in St. Mary's ED, indicating some educational disadvantage.

County Meath

County Meath aligns closely with national averages. Approximately 22.9% of residents hold an honours bachelor's degree or higher, and 8.9% have primary education or less. The distribution across education levels is balanced, reflecting a moderately educated population.

County Louth

County Louth shows a lower level of educational attainment. Only 19.8% of residents hold an honours bachelor's degree or higher, and 12% have primary education or less. The proportion with no formal education (3.3%) is also higher than the national average.

State

Nationally, 24.5% of people hold an honours bachelor's degree or higher, and 9.8% have primary education or less. The national profile reflects a broad range of educational attainment, with a trend toward increasing third-level qualifications.

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*Table 4-4: Highest Level of Education Completed in the Study Areas (CSO,2022)*

| Highest Level of Education Completed | St. Mary's ED | | St. Mary's (Part) ED | | County Meath | | County Louth | | State | |
|---|---|---|---|---|---|---|---|---|---|---|
| | No. of People | % of People | No. of People | % of People | No. of People | % of People | No. of People | % of People | No. of People | % of People |
| No formal education | 138 | 1.4 | 113 | 2.7 | 3,173 | 2.3 | 2,940 | 3.27 | 81,280 | 2.40 |
| Primary education | 464 | 4.8 | 233 | 5.6 | 9,150 | 6.6 | 7,873 | 8.76 | 251,219 | 7.42 |
| Lower secondary | 998 | 10.2 | 566 | 13.7 | 18,771 | 13.6 | 13,699 | 15.24 | 446,007 | 13.18 |
| Upper secondary | 1,821 | 18.7 | 870 | 21.0 | 27,445 | 19.8 | 16,686 | 18.56 | 613,478 | 18.13 |
| Technical or vocational qualification | 802 | 8.2 | 347 | 8.4 | 11,303 | 8.2 | 7,255 | 8.07 | 253,892 | 7.50 |
| Advanced certificate/Completed apprenticeship | 607 | 6.2 | 236 | 5.7 | 9,276 | 6.7 | 5,125 | 5.70 | 190,268 | 5.62 |
| Higher certificate | 667 | 6.8 | 265 | 6.4 | 8,657 | 6.3 | 5,064 | 5.63 | 187,488 | 5.54 |
| Ordinary bachelor degree or national diploma | 1,006 | 10.3 | 352 | 8.5 | 11,949 | 8.6 | 7,090 | 7.89 | 272,535 | 8.05 |
| Honours bachelor degree, professional qualification or both | 1,555 | 15.9 | 500 | 12.1 | 17,899 | 13.0 | 10,490 | 11.67 | 450,523 | 13.31 |
| Postgraduate diploma or degree | 1,193 | 12.2 | 395 | 9.5 | 13,814 | 10.0 | 7,296 | 8.12 | 379,416 | 11.21 |
| Doctorate (Ph.D) or higher | 69 | 0.7 | 32 | 0.8 | 1,003 | 0.7 | 565 | 0.63 | 38,212 | 1.13 |
| Not stated | 433 | 4.4 | 237 | 5.7 | 5,986 | 4.3 | 5,807 | 6.46 | 220,311 | 6.51 |
| **Total** | 9,753 | | 4,146 | | 138,426 | 100 | 89,890 | 100 | 3,384,629 | 100 |

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Educational attainment in the study area is generally strong, particularly in St. Mary's ED, where nearly 30% of residents hold honours bachelor's or postgraduate degrees exceeding the national average. St. Mary's (Part) ED, shows slightly lower third-level attainment and higher rates of lower secondary and primary education, indicating some localised educational disadvantage. County Meath aligns closely with national trends, while County Louth shows slightly lower educational outcomes. These patterns suggest that the Proposed Development is well-positioned within a community that is likely to benefit from employment and training opportunities, with potential to support further educational uplift in areas with lower attainment.

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### 4.3.4 Transport

Tables 4-5, 4-6 and 4-7 detail the commuting and travel data. The following paragraphs detail the observations from the data outlined in these tables.

St. Mary's ED

The majority of residents (54.5%), leave home between 07:00 and 08:30, with the peak between 08:01 and 08:30 (22%). A notable 10.8% leave before 06:30, which is higher than the national average (6.7%), suggesting early commuting patterns. Approximately 49.7% of residents have a commute that is less than 30 minutes, and 18.2% have a commute of 30-45 minutes. However, 17.2% commute more than an hour, which is greater than the national average (8.7%). Car use is dominant in the area, with 38.3% driving and 20.6% travelling as passengers. Public transport use is relatively high (15% by bus, 2.5% by train), while active travel (walking and cycling) is low (8.6%).

St. Mary's (Part) ED

Similar to St. Mary's ED, approximately 53.6% leave for work, school or college between 07:00 and 08:30. Approximately 53.1% of the population undertake a commute less than 30 minutes, and 16.5% commute 30-45 minutes. Approximately 13.4% have a longer commute of over 1 hour. Car use is slightly lower than in St. Mary's ED (32.8% drivers, 18.3% passengers). Walking is significantly higher (18.7%), suggesting greater proximity to services or schools. Public transport use is moderate (10.2% by bus, 2.6% by train).

County Meath

Within County Meath, 49.7% of commuters leave between 07:00 and 08:30. Early departures (before 07:00) are common (22.9%), reflecting long-distance commuting patterns. Approximately 52.1% of the population have a commute that is under 30 minutes, and 17.2% have a commute that is 30-45 minutes. About 14.7% commute over an hour. Car use is high (38.6% drivers, 19.4% passengers), with public transport use moderate (10.5% by bus, 1.1% by train). Walking is lower than the national average (12%).

County Louth

Within County Louth 56.1% of commuters leave between 07:00 and 08:30. Early departures are less common (7.9% before 06:30). Approximately 60.6% of people commute under 30 minutes, which is the highest among the areas assessed. 11.1% of people commute over an hour. Car use is slightly lower than in County Meath (34.4% drivers, 20.7% passengers) with public transport use moderate (9.3% by bus, 1% by train). Walking is higher in this area compared with County Meath (14.3%).

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State

Nationally, 57.6% of people leave between 07:00 and 08:30. Early departures are least common nationally (6.7% before 06:30). Approximately 57.5% of people commute under 30 minutes, and 17.3% commute 30-45 minutes. Only 8.7% commute over an hour. Car use is widespread (34.7% drivers, 19.1% passengers), with public transport use moderate (9% by bus, 2.4% by train), and walking is common (12.6%).

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*Table 4-5: Time Leaving Home to Travel to Work, School or College (CSO, 2022)*

| Departure times | St. Marys ED | | St Marys (Part) ED | | County Meath | | County Louth | | State | |
|---|---|---|---|---|---|---|---|---|---|---|
| | No. of People | % of People | No. of People | % of People | No. of People | % of People | No. of People | % of People | No. of People | % of People |
| Before 06:30 | 1,198 | 10.8 | 364 | 8.2 | 14,272 | 9.9 | 6,780 | 7.9 | 212,439 | 6.7 |
| 06:30 - 07:00 | 1,433 | 12.9 | 478 | 10.8 | 18,663 | 13.0 | 8,003 | 9.3 | 312,861 | 9.8 |
| 07:01 - 07:30 | 997 | 9.0% | 411 | 9.3 | 14,546 | 10.1 | 7,292 | 8.5 | 299,508 | 9.4 |
| 07:31 - 08:00 | 1,727 | 15.5 | 625 | 14.1 | 24,040 | 16.7 | 14,090 | 16.4 | 564,895 | 17.7 |
| 08:01 - 08:30 | 2,445 | 22.0 | 1,002 | 22.6 | 28,875 | 20.0 | 20,346 | 23.6 | 716,822 | 22.5 |
| 08:31 - 09:00 | 1,841 | 16.6 | 741 | 16.7 | 23,008 | 16.0 | 13,875 | 16.1 | 479,703 | 15.1 |
| 09:01 - 09:30 | 204 | 1.8 | 83 | 1.9 | 3,540 | 2.5 | 2,186 | 2.5 | 89,676 | 2.8 |
| After 09:30 | 604 | 5.4 | 268 | 6.1 | 6,746 | 4.7 | 4,342 | 5.0 | 184,515 | 5.8 |
| Not stated | 661 | 6.0 | 467 | 10.5 | 10,435 | 7.2 | 9,212 | 10.7 | 326,542 | 10.3 |
| **Total** | 11,110 | | 4,439 | | 144,125 | | 86,126 | | 3,186,961 | |

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*Table 4-6: Journey Time to Work, School or College (CSO, 2022)*

| Journey Time | St. Marys ED | | St Marys (Part) ED | | County Meath | | County Louth | | State | |
|---|---|---|---|---|---|---|---|---|---|---|
| | No. of Peo-ple | % of Peo-ple | No. of People | % of People | No. of People | % of People | No. of People | % of People | No. of People | % of People |
| Under 15 mins | 2,879 | 25.9 | 1,239 | 27.9 | 39,900 | 27.7 | 28,710 | 33.3 | 936,520 | 29.4 |
| 1/4 hour - under 1/2 hour | 2,638 | 23.7 | 1,120 | 25.2 | 35,172 | 24.4 | 23,522 | 27.3 | 894,844 | 28.1 |
| 1/2 hour - under 3/4 hour | 2,027 | 18.2 | 731 | 16.5 | 24,840 | 17.2 | 11,206 | 13.0 | 550,229 | 17.3 |
| 3/4 hour - under 1 hour | 985 | 8.9 | 276 | 6.2 | 12,089 | 8.4 | 3,714 | 4.3 | 186,834 | 5.9 |
| 1 hour - under 1 1/2 hours | 1,368 | 12.3 | 410 | 9.2 | 15,750 | 10.9 | 6,249 | 7.7 | 195,397 | 6.1 |
| 1 1/2 hours and over | 547 | 4.9 | 184 | 4.2 | 5,361 | 3.7 | 3,285 | 3.8 | 80,867 | 2.5 |
| Not stated | 666 | 6.0 | 479 | 10.8 | 11,013 | 7.6 | 9,440 | 11.0 | 342,270 | 10.7 |
| **Total** | 11,110 | | 4,439 | | 144,125 | | 86,126 | | 3,186,961 | |

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*Table 4-7: Means of travel to work, school, college or childcare (CSO, 2022)*

| Means of Travel | St. Marys ED | | St Marys (Part) ED | | County Meath | | County Louth | | State | |
|---|---|---|---|---|---|---|---|---|---|---|
| | No. of People | % of People | No. of People | % of People | No. of People | % of People | No. of People | % of People | No. of People | % of People |
| On Foot | 992 | 7.8 | 922 | 18.7 | 19,585 | 12.0 | 13,699 | 14.3 | 456,291 | 12.6 |
| Bicycle | 106 | 0.8 | 81 | 1.7 | 2,013 | 1.2 | 1,791 | 1.9 | 9,7212 | 2.7 |
| Bus, minibus or coach | 1,906 | 15.0 | 503 | 10.2 | 17,087 | 10.5 | 8,914 | 9.3 | 32,3923 | 9.0 |
| Train, DART or LUAS | 323 | 2.5 | 127 | 2.6 | 1,866 | 1.1 | 936 | 1.0 | 85,316 | 2.4 |
| Motorcycle or scooter | 22 | 0.8 | 11 | 0.2 | 289 | 0.2 | 161 | 0.2 | 9,150 | 0.3 |
| Car Driver | 4,880 | 38.3 | 1,613 | 32.8 | 62,869 | 38.6 | 33,048 | 34.4 | 1,254,419 | 34.7 |
| Car passenger | 2,627 | 20.6 | 902 | 18.3 | 31,592 | 19.4 | 19,873 | 20.7 | 691,044 | 19.1 |
| Van | 399 | 3.1 | 116 | 2.36 | 7,896 | 4.8 | 4,052 | 4.2 | 148,823 | 4.1 |
| Other (incl. lorry) | 29 | 0.2 | 6 | 0.1 | 675 | 0.4 | 317 | 0.3 | 14,092 | 0.4 |
| Work mainly at or from home | 953 | 7.5 | 296 | 6.0 | 11,330 | 7.0 | 5,778 | 6.0 | 266,726 | 7.4 |
| Not stated | 498 | 3.9 | 345 | 7.0 | 7,848 | 4.8 | 7,458 | 7.8 | 266,412 | 7.4 |
| **Total** | 12,735 | | 4,922 | | 163050 | | 96027 | | 3,613,408 | |

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Commuting patterns in the study area reveal a strong reliance on private vehicles, with over 58% of residents in St. Mary's ED and 51% in St. Mary's (Part) ED commuting by car, either as drivers or passengers. Public transport usage is slightly above national averages in St. Mary's ED, particularly for bus travel, while active travel modes such as walking and cycling are underutilised in St. Mary's ED but more common in St. Mary's (Part) ED. Departure times are concentrated between 07:00 and 08:30, with a notable proportion of early commuters, especially in St. Mary's ED. Journey time data shows that while most residents commute under 30 minutes, a small number of people, particularly in St. Mary's ED and County Meath, travel over an hour, exceeding national averages. These trends suggest a degree of car dependency and long-distance commuting, which may contribute to stress, reduced leisure time, and environmental impacts.

Chapter 13 Material Assets – Traffic and Transport outlines the receiving environment in further detail with regard to traffic and transport.

### 4.3.5 Deprivation Indices

In addition, the Pobal HP Deprivation Indices was reviewed for the study area. The site is located within the St. Mary's ED, and St. Mary's Small Area 167082008/01. Adjacent to the site is St. Mary's (Part) ED and St. Mary's (Part) Small Area 147043007. The deprivation index and relevant information for both areas are included in Table 4-8 below.

*Table 4-8: Pobal HP Deprivation Indices*

| Pobal Deprivation Indices | St. Mary's Small Area 167082008/01 | St. Mary's (Part) Small Area 147043007 |
|---|---|---|
| Pobal HP Index 2022 | 11.02 | 1.72 |
| Pobal HP Description 2022 | Affluent | Marginally Above Average |
| Population 2022 | 343 | 382 |
| Age Dependency Ratio 2022 | 33.53 | 27.75 |
| Lone Parent Ratio 2022 | 8.93 | 26.23 |
| Proportion Primary Education Only 2022 | 2.03 | 4.19 |
| Proportion at Third Level Education 2022 | 69.59 | 43.11 |
| Unemployment Rate – Male | 5.00 | 8.11 |
| Unemployment Rate - Female | 17.53 | 12.50 |

The small area in which the site is located, St. Mary's Small Area 167082008/01, is considered to be affluent.

The small area adjacent to the site, St. Mary's (Part) Small Area 147043007, is considered to have "marginally above average" deprivation levels.

### 4.3.6 Human Health

Health, as defined by the World Health Organization (WHO), is "a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity". The Healthy Ireland Framework 2013-2025 defines health as 'everyone achieving his or her potential to

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enjoy complete physical, mental and social wellbeing. Healthy people contribute to the health and quality of the society in which they live, work and play'. This framework also states that health is much more than an absence of disease or disability, and that individual health, and the health of a country affects the quality of everyone's lived experience.

Health is an essential resource for everyday life, a public good and an asset for health and human development. A healthy population is a major asset for society and improving the health and wellbeing of the nation is a priority for Government. Healthy Ireland Framework 2013-2025 is a collective response to the challenges facing Ireland's future health and wellbeing.

Table 4-9 below outlines the general health of the population in each study area.

St. Mary's ED

A high proportion of the population report having "very good" health (58.6%) and "good" health (29.5%), totalling 88.1%. This is above the national average (83%). Only 1.2% report "bad" or "very bad" health, indicating strong general health in the area.

St. Mary's (Part) ED

Health outcomes are slightly lower than St Mary's ED, with 52.3% reporting "very good" health and 30.8% "good" which are still above national averages. However, "fair" (8.6%) and "bad" (2.1%) health responses are slightly elevated, suggesting some disparities.

County Meath

Health indicators are strong, with 57.1% reporting "very good" health and 29.6% "good". These figures are consistent with national averages.

County Louth

County Louth shows a very low level of "very good" health (only 0.36%) and higher "fair" and "bad" health responses. This may reflect socio-economic challenges.

State

Nationally, 53.2% report "very good" health and 29.7% "good". St. Mary's ED exceeds these figures, while St. Mary's (Part) ED and Louth are largely below.

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*Table 4-9 General Health of the Population in the Study Areas (CSO, 2022)*

| General Health | St. Mary's ED | | St. Mary's (Part) ED | | County Meath | | County Louth | | State | |
|---|---|---|---|---|---|---|---|---|---|---|
| | No. of People | % of People | No. of People | % of People | No. of People | % of People | No. of People | No. of People | No. of People | % of People |
| Very Good | 9,612 | 58.6 | 3,531 | 52.3 | 126,097 | 57.1 | 508 | 0.4 | 2,740,994 | 53.2 |
| Good | 4,838 | 29.5 | 2,080 | 30.8 | 65,385 | 29.6 | 41,520 | 29.7 | 1,527,027 | 29.7 |
| Fair | 1,088 | 6.6 | 580 | 8.6 | 16,686 | 7.7 | 13,290 | 9.5 | 444,895 | 8.6 |
| Bad | 180 | 1.1 | 139 | 2.1 | 2,579 | 1.2 | 2,226 | 1.6 | 72,556 | 1.4 |
| Very Bad | 23 | 0.1 | 19 | 0.3 | 607 | 0.3 | 72,443 | 51.9 | 16,843 | 0.3 |
| Not Stated | 662 | 4.0 | 405 | 6.0 | 9,472 | 4.3 | 9,716 | 7.0 | 346,824 | 6.7 |
| **Total** | 16,403 | 100 | 6,754 | 100 | 220,826 | 100 | 139,703 | 100 | 5,149,139 | 100 |

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Health outcomes in the study area are generally strong, with a high proportion of residents reporting “very good” or “good” health, particularly in St. Mary’s ED. These figures exceed national averages and reflect the area’s youthful demographic and high employment rates. While St. Mary’s (Part) ED shows slightly lower health indicators, the overall picture is one of good community, health and wellbeing.

### 4.3.7 Social Health

According to the World Health Organisation, poor social and economic circumstances affect health throughout life. Good health involves reducing levels of educational failure, reducing insecurity and unemployment, and improving housing standards. Health is influenced, either positively or negatively, by a variety of factors. Some of these factors are genetic or biological and are relatively fixed. ‘*Social determinants of health* ’arise from the social and economic conditions in which people live. These include housing type and quality, the surrounding environment, access to healthcare and education services, income levels, and the nature of employment. All of these factors can influence a person’s health and the lifestyle choices they make.

A range of factors have been identified as social determinants of health. These can include the wider socio-economic context, inequality, poverty, social exclusion, socioeconomic position, income, public policies, health services, employment, education, housing, transport, the built environment, health behaviours or lifestyles, social and community support networks and stress.

People who are less well off or who belong to socially excluded groups tend to fare badly in relation to these social determinants. Being at work on the other hand provides not only an income, but can also provide access to social networks, a sense of identity and opportunities for development or progression.

Figure 4-3 presents the social determinants of health adapted from Dalghren and Whitehead (1991) and Grant and Barton (2006) as presented in Healthy Ireland.

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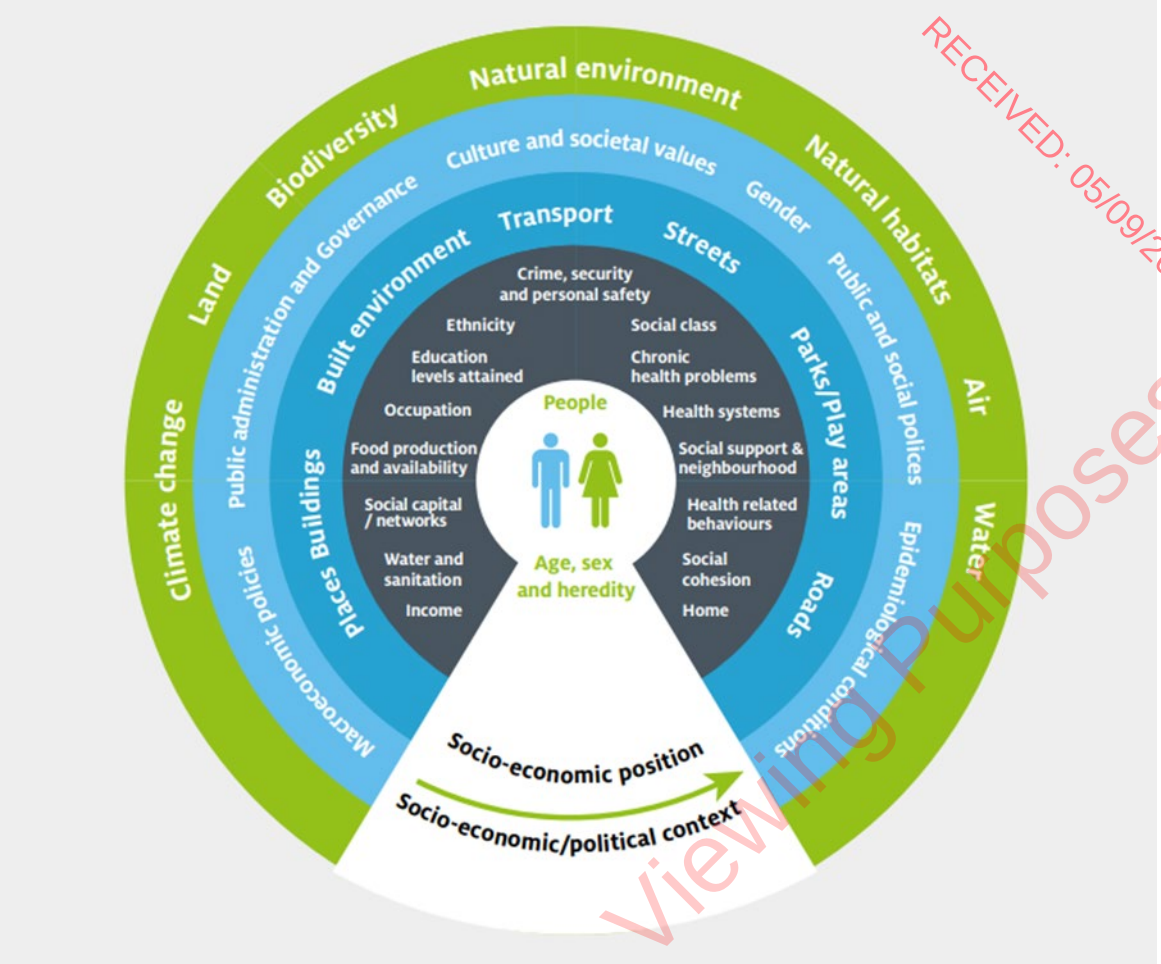



*Figure 4-3: Social Determinants of Health*

Section 4.3.3 of this chapter states that 58.6% of people in the study area are in the labour force. This reflects the high number of people of a working profile living within the area which is expected due to the percent of people of a working age living in the area.

The Proposed Development will allow for the creation of new employment. It is proposed that approximately 20 jobs will be created during the construction phase which will have a direct and indirect positive impact on the local economy and employment. There are no additional employees expected during the operational phase.

### 4.3.8 General Amenity and Tourism

Healthcare Facilities

The closest healthcare facility to the site is the Hilltop Medical Drogheda which is located approximately 980m east of the site. The site is located approximately 2.4km south west of Our Lady of Lourdes Hospital. There are a number of healthcare facilities located in Drogheda

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and it is considered that there is capacity to support the increase in population from the Proposed Development.

Education Facilities

The closest school to the site is St. John's National School which is located approximately 1.1km southeast of the site. There are a number of national schools and secondary schools located in Drogheda.

A Social Infrastructure Audit was completed by Hughes Planning and Development Consultants. The Audit outlines that there are 5 primary schools serving the site on the basis of its location within Drogheda and the surrounding area bordering County Louth and Meath, as identified by the Department of Education and Skills.

The Audit further outlines that currently there are 4 post-primary schools serving the subject site, as identified by the Department of Education and Skills. These 4 schools held a combined enrolment of 4,125 student during the 2023-2024 school year as per Department of Education and Skills (DoES) records.

Sports and Recreation

The site is surrounded by a number of sport and recreation facilities. The Aura Drogheda Leisure Centre is located approximately 985m east of the site. The Boyne Greenway is located approximately 236m north of the site and the River Boyne Promenade is located approximately 835m west of the site.

The Social Infrastructure Audit outlines that within 3km there are approximately 25 sport and recreational facilities and clubs within the distance of the site, whilst 2 more specialised facilities within 5km of the site are also noted.

Tourism and Heritage Sites

The site is located approximately 5.75km northeast of Brú na Bóinne World Heritage Site (commonly known as Newgrange), a 5,000-year-old site which attracts tourists globally and which consists of the passage tombs of Newgrange, Knowth and Dowth. Closer to the site, Drogheda Museum is located approximately 2.6km east of the site.

Additionally, the Battle of Boyne field is located approximately 1.5km northwest of the site.

An Archaeological Impact Assessment and Method Statement was completed which concluded that there are considered to be no residual impacts associated with the Proposed Development.

### 4.3.9 Summary of Receptors and Sensitivity

The sensitivity of the local area and population was determined considering the above examination of the local area and population, and the IEMA Guide to Determining Significance for Human Health in Environmental Impact Assessment.

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*Table 4-10: Sensitivity Determination*

| Criteria | Classification | Category | Justification |
|---|---|---|---|
| Deprivation | Affluent and Marginally Above Average. | Low | The deprivation index for the small area whereby the site is located is described as "Affluent". The deprivation index adjacent to the site is "Marginally Above Average". |
| Resource Sharing | Sufficient | Low | The Proposed Development will require sharing resources including water supply, electricity supply, road network. The site is located in a suburban area that is considered to have resources to cater for both the Proposed Development and the local area. |
| Inequalities | Narrow | Very Low | The local area has a majority of "very good" or "good" health which is fairly homogenous. In addition, the majority of the population is "at work" with only 1.9% of the population in the study area being in long-term unemployment. |
| Community Outlook | Neutral | Low | The site is located in a suburban setting with few sensitive receptors in close proximity. The Proposed Development is similar to developments that are / have been operational in the area. It is expected that the local population would have a neutral outlook towards the Proposed Development. |
| Daily Activities | Slightly limited | Low | 3.2% of the population identifies as being unable to work due to permanent sickness or disability. |
| Care Taking | Some care required | Low | With 3.2% of the population being unable to work due to permanent sickness or disability, it is expected that some care is required or being provided for within the study area. |
| Dependencies | Independent | Very Low | The age dependency ratio for the study area is 33.53%, which is lower than the national average of 53.2%. |
| Health Status | Very good | Very Low | The majority of the population identified as having "very good" or "good" health. |
| Adaptability | High capacity | Very Low | The population within the study area demonstrates a high capacity for adaptability, supported by strong employment rates, high levels of educational attainment, and a predominantly working-age demographic. |
| **Overall Sensitivity** | | **Very Low** | |

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## 4.4 Characteristics of the Proposed Development

A detailed description of the Proposed Development is presented in Chapter 2 of this EIAR.

## 4.5 Potential Effects of the Proposed Development

### 4.5.1 Construction Phase

#### *4.5.1.1 Population demographics and Vulnerable Groups*

The construction phase of the Proposed Development is expected to be approximately 24 months. It is not expected to result in any change to the population demographics of the area. The temporary nature of construction employment may attract workers from the local or regional labour pool, however this is not expected to alter the resident population structure. Vulnerable groups are unlikely to be directly affected due to the suburban setting and limited proximity to vulnerable populations.

The construction methods employed, and the hours of construction proposed will be designed to minimise potential effects to nearby residents.

#### *4.5.1.2 Socio-economic Conditions and Social Determinants of Health*

The construction phase will have a short-term, positive impact on the local economy through job creation and increased demand for local goods and services. This supports key social determinants of health such as employment, income, and community vitality.

#### *4.5.1.3 Environmental Pathways to Health*

##### 4.5.1.3.1 Water Quality

Construction activities may pose a risk to surface and groundwater quality through potential sediment runoff, fuel spills, or wastewater discharge. However, with standard construction-phase mitigation measures as outlined within the Construction Environmental Management Plan, the risk to water quality and human health is considered to be low, localised, and short-term.

##### 4.5.1.3.2 Air Quality

Dust generation from groundworks and vehicle movements may temporarily affect local air quality. However, given the suburban nature of the site, exposure is expected to be minimal. Emissions from construction machinery and vehicles will be short-term and not significant in terms of air quality. Mitigation measures outlined in Chapter 8 will further reduce any potential effects.

##### 4.5.1.3.3 Noise and Vibration

Construction noise and vibration may cause temporary disturbance to nearby receptors, particularly during site clearance and heavy machinery use. However, given the number of sensitive receptors in the vicinity and the short duration of works, these effects are expected to be minor and manageable through standard mitigation (e.g. restricted working hours, noise barriers if needed). The potential effects of noise and vibration are outlined further within Chapter 10 Noise and Vibration.

##### 4.5.1.3.4 Landscape and Visual

During the construction phase, it is inevitable that there will be machinery and materials located on site in addition to ancillary storage facilities for workers and hoarding for example. There may be potential for a slightly negative impact on the visual appearance of the site. It is anticipated that the impact will be temporary in nature and will ultimately provide a positive visual appearance on completion of the development.

Refer to Chapter 11 Landscape and Visual for further information.

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#### *4.5.1.4 Traffic, Transport and Accessibility*

Construction traffic, including deliveries and contractor vehicles, will temporarily increase traffic volumes on local roads. This may cause minor disruption or delays, particularly at site access points. The potential effects of the Proposed Development on traffic and transport are outlined within Chapter 13. Material Assets – Traffic and Transport.

#### *4.5.1.5 General Amenity and Tourism*

Temporary visual and noise impacts may affect the general amenity of the area during construction. However, there are no major tourism assets or high-sensitivity receptors within close proximity to the site. As such, effects on tourism or local amenity are expected to be negligible and short-term.

#### *4.5.1.6 Mental Health and Wellbeing*

Construction-related effects such as noise, dust, and traffic may cause minor stress or inconvenience to nearby residents. However, due to the suburban setting and low receptor density, these effects are expected to be limited. The positive economic effects of job creation may also contribute to improved wellbeing for those employed during the construction phase. As such, effects on mental health and wellbeing are expected to be negligible and short-term.

#### *4.5.1.7 Summary of Effects on Human Health*

In summary, the construction phase of the Proposed Development is expected to have positive short-term effects on employment and local economic activity. It is expected that there will be temporary environmental effects (air, noise, water), that are unlikely to cause significant effects on human health, especially with appropriate mitigation measures in place as set out in each of the specialist chapters of this EIAR, with a summary of mitigation measures included in Chapter 17 Mitigation and Monitoring.

Effects on vulnerable groups amenity, or mental wellbeing during the construction phase are expected to be negligible and short term.

Overall, the construction phase is not anticipated to result in any significant adverse effects on population or human health.

### 4.5.2 Operational Phase

#### *4.5.2.1 Population Demographics and Vulnerable Groups*

The operational phase of the Proposed Development will result in an increase in the local population due to the provision of 249 residential units. The mix of housing types, including one- to four-bedroom units, is likely to attract a diverse range of household types, including single occupants, couples, and families. The inclusion of a crèche facility will support young families and working parents, contributing to a more balanced demographic profile. The Proposed Development complies with all relevant accessibility standards and regulations. While not specifically targeted at vulnerable groups, the design is inclusive and suitable for a wide range of household types, including older persons and individuals with disabilities. It is considered that the effect of the Proposed Development on Population Demographics and Vulnerable Groups will be slight, not significant, positive and long-term.

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#### *4.5.2.2 Socio-economic Conditions and Social Determinants of Health*

The Proposed Development is expected to contribute positively to local socio-economic conditions. The addition of new housing will support housing demand in the area and will help alleviate pressure on the housing market. The crèche facility will provide childcare services supporting working families and contributing to early childhood development. The provision of public open space and pedestrian/cyclist infrastructure will enhance access to recreational opportunities and promote active lifestyles. These elements align with key social determinants of health, including housing, childcare, physical activity, and community connectivity.

A Social Infrastructure Audit was completed by Hughes Planning and Development Consultants (HPDC, 2025). The Social Infrastructure Audit report establishes the existing level of services and facilities that are available within an accessible range of the site and the surrounding area, taking into consideration their capacity to accommodate the proposed development. This report contains an audit of the existing and proposed social infrastructure in the area relating to:

- Education Facilities;
- Childcare Facilities;
- Healthcare Facilities;
- Sport and Recreation Facilities;
- Religious Facilities;
- Community Facilities; and
- Retail Facilities

The report concludes that

> *"there is a suitable quantity and available capacity of existing childcare, primary educational and post-primary educational facilities in the surrounding area to cater for the needs of the future residents of the scheme. It is considered that the provision of a 411sq.m childcare facility, which can accommodate 58 no. children, is appropriate given the extensive availability of childcare facilities, both existing and incoming, within the immediate and wider area. With regards to educational facilities, we were able to establish primary and post-primary school numbers in the area and having regard to the foregoing, it is considered that the likely demand for school places resulting from the proposed development can be adequately absorbed by the existing and future school places in Drogheda.*
>
> *This Audit has also identified the availability of healthcare facilities within the immediate area and notes 17 no. facilities offering a range of both physical and mental healthcare support within 3 kilometres of the subject site. As presented in this report, it is evident that there is a wide-ranging number and variety of health care facilities in the area with capacity to serve the new residential population of the subject proposal. Religious, community and sports/recreational facilities are all well represented within both the immediate and wider area to ensure that new residents will have appropriate access to a wide range of social infrastructure which will ensure a high quality of life for new residents and lead to greater community growth in this mature area.*
>
> *Lastly, it is noted that future residents of the proposed scheme will have access to a range of existing retail centres within both easy walking and cycling distance of the subject site thus allowing ease of access to both essential and non-essential items. It*

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*is considered that such access reinforces the high quality of life which the future residents of the proposed development will benefit from. It is thus considered that the area of Drogheda and surrounding county Meath provide a wide-ranging array of social infrastructure to which the proposed development will both benefit, support and enrich through the provision of additional residential units, the construction of a new creche facility and the creation of new public open space" (HPDC, 2025).*

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#### *4.5.2.3 Environmental Pathways to Health*

##### 4.5.2.3.1 Water Quality

The operational phase will involve the use of a new foul drainage network and pumping station with connection to the existing watermain. Provided that all infrastructure is constructed and maintained in accordance with Uisce Éireann standards, no adverse effects on water quality are anticipated. However, any failure in the operation or maintenance of the pumping station could result in localised pollution or odour issues, which may affect nearby residents.

Refer to Chapter 7 Hydrology and Hydrogeology for further details.

##### 4.5.2.3.2 Air Quality

Air quality effects during the operational phase are expected to be minimal and typical of a residential development. Emissions will primarily arise from domestic heating and vehicle use. The inclusion of pedestrian and cyclist infrastructure may help reduce car dependency and support climate mitigation objectives. Nonetheless, the increase in traffic associated with 249 residential units may contribute to localised emissions particularly during peak hours.

Refer to Chapter 8 Air Quality for further details.

##### 4.5.2.3.3 Noise and Vibration

Operational noise will be consistent with that of a residential neighbourhood and is not expected to result in disturbances. Sources of noise may include traffic movements, domestic activity, and use of communal spaces. Given the site layout and landscaping provisions, noise effects are expected to be localised. No sources of vibration are anticipated during the operational phase.

Refer to Chapter 10 Noise and Vibration for further details.

##### 4.5.2.3.4 Landscape and Visual

The Proposed Development will change the view of this site when viewed by the surrounding residents, however the layout of the Proposed Development has appropriately considered the existing environment as discussed in Chapter 11 Landscape and Visual.

The layout of the Proposed Development has positioned the highest forms at the least sensitive locations within the site. A Daylight and Sunlight Assessment has been carried out and is submitted as a standalone document with the application. The provision of a pedestrian link through the site in addition to the landscaping proposals including functional areas of open space will contribute towards the successful integration of the subject development into the surrounding environment making it an attractive addition to the area.

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#### *4.5.2.4 Traffic, Transport and Access*

The Proposed Development includes provision for 396 car parking spaces and dedicated pedestrian and cyclist infrastructure, with two new connections to Rathmullan Road. According to the Planning Report (HPDC, 2025), vehicular parking provision was provided in full accordance with the provisions of the Meath County Development Plan. In accordance with SPPR 4 'Cycle Parking and Storage' of the Compact Settlement Guidelines, bicycle parking would be accommodated within the rear garden of all residential units which have ground level open space. Each apartment block would be provided with dedicated bicycle parking structures whilst each first floor level duplex unit would be served by a bicycle parking structure to the front.

The increase in traffic volumes associated with the new residential units may place additional pressure on the local road network, particularly at junctions and during peak commuting times. While the internal road network and junction upgrades are designed to accommodate this increase, the potential for congestion or reduced road safety should be considered.

Refer to Chapter 13 Material Assets – Traffic and Transport.

#### *4.5.2.5 General Amenity and Tourism*

The site is located in close proximity to a range of healthcare, education, and recreational facilities. The availability of these services within walking or cycling distance is expected to support the integration of the new residents into the existing community and enhance the overall amenity value of the area. The provision of public open space and pedestrian/cyclist connections within the Proposed Development will further contribute to local amenity, encouraging active lifestyles and social interaction among residents.

In terms of tourism, the site is situated within a wider area of cultural and historical significance, including proximity to the Newgrange World Heritage Site, the Battle of the Boyne site, and Drogheda Museum. While the Proposed Development is unlikely to attract tourists directly, it is also not expected to detract from the visitor experience at these locations, given the separation distance and the urban context of the site.

Overall, the operational phase is expected to enhance general amenity through improved access to services, recreational opportunities, and public open space. No adverse effects on tourism are anticipated, and the development may indirectly support the local tourism economy by contributing to the vitality and attractiveness of the surrounding area. It is considered that the Proposed Development will result in a negligible, not significant, positive and long-term effect in terms of general amenity and tourism.

#### *4.5.2.6 Mental Health and Wellbeing*

The operational phase is expected to support mental health and wellbeing through improved access to housing, childcare, green space, and active travel routes. The availability of private gardens, balconies, and communal open space will contribute to quality of life and opportunities for social interaction. However, increased density and traffic may result in an increase in stress. Additionally, if local services such as healthcare or education become overstretched due to population growth, this could indirectly affect wellbeing. It is considered that the Proposed Development will result in a negligible, not significant, neutral and long-term effect in terms of mental health and well-being.

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#### *4.5.2.7 Summary of Effects on Human Health*

### 4.5.3 Magnitude of Effects

The magnitude of effects was determined using the IEMA 2022 EIA Guide to Determining Significance for Human Health in Table 4-11 below.

*Table 4-11 Magnitude of Effects*

| Criteria | Classification | Category | Justification |
|---|---|---|---|
| Scale | Local | Low | The scale of effects is considered to be local due to the nature of effects, the location and size of the site. |
| Duration | Permanent | High | The Proposed Development is seeking permanent planning permission. Therefore, any effect caused by the Proposed Development will be permanent. |
| Frequency | Frequent | Medium | The effects caused by the construction phase, predominately include noise and vibration, air quality, and water quality which are short term but frequent. |
| Quality of Life | Minor change | Negligible | The Proposed Development will result in a minor change in quality-of-life for the surrounding area. With the mitigation measures proposed, the effect of the Proposed Development is considered to be not significant. |
| Population Effected | Local | Low | The Proposed Development is located in a suburban area. Effects are predicted to be at a local scale. The magnitude is considered to be Low. |
| Reversibility | Gradual | Low | The Proposed Development is relatively reversible through remediation works. |
| Service Quality Implications | None | Negligible | There will be no service quality implication as a result of the Proposed Development. |
| **Overall Magnitude** | | **Low** | |

### 4.5.4 Potential Cumulative Effects

The list of cumulative schemes considered has been detailed in Chapter 2 of this EIAR. Based on a review of these schemes it is not considered that the Proposed Development will act in combination or cumulatively with any existing or approved projects in the surrounding area. Refer to Chapter 2 for further information.

The cumulative effects of the Proposed Development on Air Quality, Noise and Vibration, Traffic and Transport, and Water Quality are assessed within the specialist chapters of this EIAR.

### 4.5.5 "Do Nothing" Impact

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The Do-Nothing impact has been considered in terms of population and human health in this chapter. If the Proposed Development did not proceed, the site would remain as a greenfield site and there would be no immediate impact on the existing population or economic activity in the area. This would be an under-utilisation of zoned and serviceable urban lands from a sustainable planning and development perspective.

## 4.6 Avoidance, Remedial & Mitigation Measures

### 4.6.1 Construction Phase

No specific mitigation measures are required during the construction phase of the Proposed Development in relation to population and human health, given the lack of direct, adverse effects resulting from the Proposed Development. The potential impacts on the human environment relate to other environmental aspects such as air quality, noise and vibration, water quality and traffic and where required, the related mitigation measures are dealt with in the corresponding chapters of this EIAR

### 4.6.2 Operational Phase

No specific mitigation measures are required during the operational phase of the Proposed Development in relation to population and human health, given the lack of direct, adverse effects resulting from the Proposed Development. However, mitigation measures in relation to air quality, climate, water quality, noise, traffic, and waste are identified in their respective chapters in this EIAR.

### 4.6.3 “Worst Case” Scenario

In the event that mitigation measures fail to minimise and / or prevent potential adverse effects, the following possibilities may occur:

- An increase in traffic within the surrounding roads and junctions of the site.
- An increase in noise caused during the construction phase can cause a disturbance to any residential dwellings in close proximity to the site.
- An increase in the production of dust during the construction phase that can be carried throughout the site and create adverse effects on the neighbouring environment.

However, it is imperative that such mitigation measures are implemented to ensure that the worst-case scenario does not occur. When considering the mitigation measures that will be in place, the event of a worst-case scenario is deemed to be unlikely.

## 4.7 Residual Effects

Residual Impacts are defined *as ‘effects that are predicted to remain after all assessments and mitigation measures*.’ No negative residual impacts in the context of population and human health are anticipated regarding this Proposed Development.

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*Table 4-12: Residual Effects*

| Activity | Receptor | Predicted Impact | Quality | Significance | Duration | Type | Mitigation Measures | Residual Effect |
|---|---|---|---|---|---|---|---|---|
| **Construction Phase** | | | | | | | | |
| Construction phase noise | Noise Sensitive Locations (See Chapter 10 Noise and Vibration) | Noise impacts | Negative | Minor | Short term | Direct | Mitigation measures proposed in Chapter 10. | Slight |
| Construction phase related traffic | Receptors within close proximity to the site | Air quality impacts Nuisance | Negative | Imperceptible | Short term | Direct | Mitigation measures proposed in Chapter 8. | Imperceptible |
| Construction Phase Employment | Study Area | Increase in employment | Positive | Minor | Short term | Direct | N/A | Slight |
| **Operational Phase** | | | | | | | | |
| Operational phase noise | Noise Sensitive Locations (See Chapter 10 Noise and Vibration) | Noise impacts | Negative | Minor | Long term | Direct | Mitigation measures proposed in Chapter 10. | Slight |
| Operational phase related traffic | Receptors within close proximity to the site | Air quality impacts | Negative | Imperceptible | Medium to long term | Direct | Mitigation measures proposed in Chapter 8. | Imperceptible |
| Operational phase related traffic | Noise Sensitive Receptors (listed in Chapter 10) | Noise impacts | Negative | Imperceptible | Medium to long term | Direct | Mitigation measures proposed in Chapter 10. | Imperceptible |

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## 4.8 Monitoring

In relation to the effects of the Proposed Development on Population and Human Health, it is considered that the monitoring measures outlined throughout this EIAR in regard to the other environmental topics such as water, air quality and climate and noise address monitoring requirements.

## 4.9 Interactions

There are numerous inter-related environmental topics described in detail throughout this EIAR document which are of relevance to population and human health.

- **Air Quality -** The Air Quality chapter provides essential information on potential emissions arising from both the construction and operational phases of the Proposed Development. These emissions, particularly particulate matter and nitrogen dioxide from construction machinery and increased traffic, can affect respiratory health. Chapter 8 Air Quality sets out the mitigation measures required to minimise effects.
- **Noise and Vibration -** Noise and vibration are key environmental stressors that can influence human health through annoyance, sleep disturbance, and stress-related impacts. Chapter 10 assesses predicted noise levels during both construction and operational phase, particularly in relation to sensitive receptors such as residential dwellings and the proposed crèche. Chapter 10 sets out the mitigation measures required to minimise these effects.
- **Traffic and Transport -** The Traffic and Transport chapter informs the Population and Human Health assessment by identifying changes in traffic volumes, patterns, and access during both phases of the development. Increased traffic can contribute to air and noise pollution, road safety concerns, and reduced accessibility for pedestrians and cyclists. These factors are considered in terms of their potential to affect physical health, mental wellbeing, and access to services, particularly for vulnerable groups. The inclusion of pedestrian and cyclist infrastructure is also evaluated for its potential to support active travel and healthier lifestyles. Chapter 13 assesses the effects and sets out the mitigation measures required to minimise these effects.
- **Hydrology and Hydrogeology** – There is a potential for effects on surface water and groundwater quality, which may have direct implications for human health if contamination affects drinking water sources or recreational waters. Chapter 7 assesses the effects and sets out the mitigation measures required to minimise these effects.
- **Landscape and Visual** - Changes to the visual environment can influence mental wellbeing and perceived quality of life, particularly in rural or scenic areas. The Landscape and Visual chapter evaluates the visual impact of the Proposed Development on the surrounding area, including views from public spaces and residential properties. Chapter 11 assesses the effects and sets out the mitigation measures required to minimise these effects.
- **Material Assets (Waste and Utilities)** - The Material Assets chapter provides information on the capacity of local infrastructure, including water supply, wastewater treatment, and public services such as education and healthcare. These are critical to the assessment of human health, as insufficient capacity can lead to service strain,

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reduced quality of life, and health inequalities. Chapter 14 assesses the effects and sets out the mitigation measures required to minimise these effects.

- **Archaeology and Cultural Heritage** - The Archaeology and Cultural Heritage chapter assesses the potential for impacts on heritage assets and tourism-related features. These elements contribute to community identity, local economy, and amenity value. Chapter 12 assesses the effects and sets out the mitigation measures required to minimise these effects.

## 4.10 Difficulties Encountered When Compiling

Overall, there were no difficulties encountered when compiling this Chapter of the EIAR. All research was conducted through a desk top study.

## 4.11 Conclusion

The Proposed Development is expected to result in positive, long-term effects on population and human health, particularly through the provision of housing, childcare facilities, and public open space. During the construction phase, short-term positive effects are anticipated in relation to employment and economic activity, while temporary negative effects such as noise, dust, and traffic disruption are considered, with appropriate mitigation measures outlined in the relevant chapters of this EIAR.

During the operational phase, the Proposed Development is not expected to result in significant adverse effects. Potential effects relating to traffic, air quality, and noise are considered negligible, and mitigation measures have been incorporated into the design and assessed in detail elsewhere in the EIAR.

No residual significant negative effects on population or human health are anticipated.

## 4.12 References

EIA Guide to Effective Scoping of Human Health, IEMA (2022);

EIA Guide to Determining Significance for Human Health, IEMA (2022); and,

Guidelines on the information to be contained in Environmental Impact Assessment Reports, EPA (2022);

Healthy Ireland Framework 2013-2025

Hughes Planning and Development Consultants Social and Community Infrastructure Audit (2025)

Institute of Public Health (IPH) (2021) Health Impact Assessment Guidance.

Louth County Development Plan 2021 – 2027;

Meath County Development Plan 2021 – 2027;

Ordinance Survey Ireland (OSI)

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The Central Statistics Office (CSO) 2022

WHO. Ottawa Charter for Health Promotion First International Conference on Health Promotion Ottawa, 21 November 1986 - WHO/HPR/HEP/95.1. 1986.

WHO. Preamble to the Constitution of the World Health Organization as adopted by the International Health Conference, New York, 19-22 June, 1946; signed on 22 July 1946 by the representatives of 61 States (Official Records of the World Health Organization, no. 2, p. 100) and entered into force on 7 April 1948. 1946.

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# 5 BIODIVERSITY

## 5.1 Introduction

This biodiversity chapter assesses the potential impacts of the Proposed Development on biodiversity, with particular regard to the conservation objectives of habitats and species within nearby Natura 2000 sites as well as legally protected species, habitats of conservation value, and ecological connectivity. The assessment has been undertaken in accordance with the Environmental Protection Agency (EPA) Guidelines on the Information to be Contained in EIAR (2022) and follows best practice guidance from the Chartered Institute of Ecology and Environmental Management (CIEEM, 2018).

Baseline ecological surveys have been conducted to identify and evaluate the site's habitats and species of conservation interest. Key ecological receptors include the presence of protected fauna such as badger (*Meles meles*), Otter (*Lutra lutra*), and several protected bird species, along with riparian habitats, woodlands, hedgerows, and other semi-natural features that support local biodiversity. The site is also located adjacent to a major river watercourse, the River Boyne, with hydrological connectivity to downstream Natura 2000 sites.

This chapter presents a detailed account of baseline conditions, outlines the legislative and policy context, evaluates potential effects during construction and operation, and provides a suite of mitigation, monitoring, and enhancement measures to ensure the protection and conservation of biodiversity throughout the lifecycle of the Proposed Development.

### 5.1.1 Quality Assurance and Competency of Experts

*Table 5-1 Qualified personnel involved*

| Name | Roles & Responsibilities | Qualifications | Years Experience |
|---|---|---|---|
| **Jeff Hean** | Habitat Assessment (2025); Compilation of Chapter | Ph. D Marine Biology & Zoology<br>MSc Ecology<br>BSc (Hons) Ecology<br>BSc Ecology | 10 |
| **Megan Tallon** | Chapter Review | Adv Dip Planning and Environmental Law<br>PGrad Dip Freshwater Quality, Monitoring and Assessment<br>BSc (Hons) Environmental Science and Technology | 4 |
| **Pat Doherty** | Field Surveys; Compilation of Chapter | MSc. Ecology<br>BSc. (Hons) Environmental Earth Science | 20 + |

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| Name | Roles & Responsibilities | Qualifications | Years Experience |
|---|---|---|---|
| | | BSc. Ecology | |
| **Kevin Cleary** | Review and Sign-off | BSc. Hydrogeology | 20 + |

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## 5.2 Study Methodology

A range of scientific investigations have been completed at the Proposed Development site. These investigations relate to scientific field investigations, completed between 2021 and 2025 for the Proposed Development as well as a range of investigations that were completed for a previous planning application for lands within and surrounding the Proposed Development site.

The scientific investigations completed with respect to biodiversity and that specifically relate to European Sites in the wider surrounding area include habitat surveys and an evaluation of the habitats occurring on site to function as suitable for otters, lamprey species and Atlantic salmon, all of which are qualifying species of the River Boyne and River Blackwater SAC, which is located to the north of the Proposed Development site. The habitat surveys were used to evaluate the potential for the Proposed Development site to offer suitable habitat for special conservation interest bird species or other waterbirds associated with the River Boyne and River Blackwater SPA; Boyne Estuary SPA, and the North-West Irish Sea SPA.

Details highlighting the specific study methods implemented can be found within the Appropriate Assessment (AA) Screening and Natura Impact Statement (NIS) reports.

### 5.2.1 Non-Volant Mammals

A search for field signs indicating the presence of non-volant mammals within and adjacent to the Proposed Development site was completed on the 24th May, 10th June and 28th July 2022 and 9th February 2023 and monthly during surveys completed between June 2024 and May 2025. These field signs, as described in Neal & Cheeseman (1996) and Bang & Dahlstrom (2006), include:

- mammal breeding and resting places, such as setts, holts, lairs;
- pathways & prints;
- faecal deposits & latrines (and dung pits used as territorial markers);
- feeding signs (snuffle holes);
- hair; and
- scratch marks.

The surveys for non-volant mammals were completed after periods of dry weather when field signs were more likely to be present. Figure 5.1, below, provides an overview of the transect method and pathway used to survey for volant and non-volant mammals at the Proposed Development site.

### 5.2.2 Bird Surveys

Conditions on site have been surveyed for their potential to function as a foraging habitat for wintering birds. Dedicated surveys for the presence of special conservation interest bird

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species or waterbirds of the above listed SPAs were completed during the 2020/2021, 2021/2022 and 2024/2025 non-breeding bird season, when wintering special conservation interests of these SPAs are present. Certain special conservation interest bird species of these SPAs, as identified in the screening report, are known to rely on agricultural land such as grassland and stubble for foraging and roosting, especially during high tide when intertidal foraging habitats are inundated. For instance, golden plover and lapwing, both of which are special conservation interest bird species for the Boyne Estuary SPA are considered to be examples of terrestrial waders (NPWS, 2012b). Given that the greatest likelihood of these species occurring at the Proposed Development site was during high tides, the majority of field surveys completed at the Proposed Development site were completed to coincide with high tide when waders and other waterbirds are most likely to use terrestrial habitats for foraging or roosting. Low-tide surveys were also completed so that baseline information relating to ex-situ waterbird movements from SPAs to the Proposed Development site and the vicinity of the Proposed Development site could be gathered. There is no formal methodology published for the surveying of wintering waterbirds on terrestrial sites. Surveys of waterbirds at low-tide to inform IWeBS surveys and surveys at coastal SPAs rely on 4 low-tide survey counts completed between the months of September and March. This is consistent with the British Trust for Ornithology (BTO) method of four surveys during the winter season, ideally during the months of November to February. Bird surveys were completed on the following dates.

*Table 5-2 Bird survey dates*

| Date | Survey Focus |
|---|---|
| 29th January 2021 | Winter Birds |
| 12th February 2021 | Winter Birds |
| 25th February 2021 | Winter Birds |
| 24th March 2021 | Winter Birds |
| 1st April 2021 | Date is during the breeding season but overlaps with the migratory period for wintering species |
| 16th April 2021 | Date is during the breeding season but overlaps with the migratory period for wintering species |
| 30th November 2021 | Winter Birds |
| 15th December 2021 | Winter Birds |
| 10th January 2022 | Winter Birds |
| 24th May 2022 | Breeding Birds |
| 10th June 2022 | Breeding Birds |
| 28th July 2022 | Breeding Birds |
| 9th February 2023 | Winter Birds |
| 25th June 2024 | Breeding Birds |
| 18th July 2024 | Breeding Birds |
| 26th August 2024 | Breeding Birds |
| 30th September 2024 | Breeding Birds |
| 24th October 2024 | Winter Birds |
| 26th November 2024 | Winter Birds |
| 19th December 2024 | Winter Birds |
| 31st January 2025 | Winter Birds |
| 14th February 2025 | Winter Birds |
| 12th March 2025 | Winter Birds |
| 21st April 2025 | Breeding Birds |
| 30th May 2025 | Breeding Birds |

Surveys on the above listed dates were completed from a vantage point on the public road located to the south of the development site, where a view over the entire site is afforded. In addition to the vantage point survey, the lands within the Proposed Development site were walked on each survey occasion at the end of the vantage point to confirm presence/absence

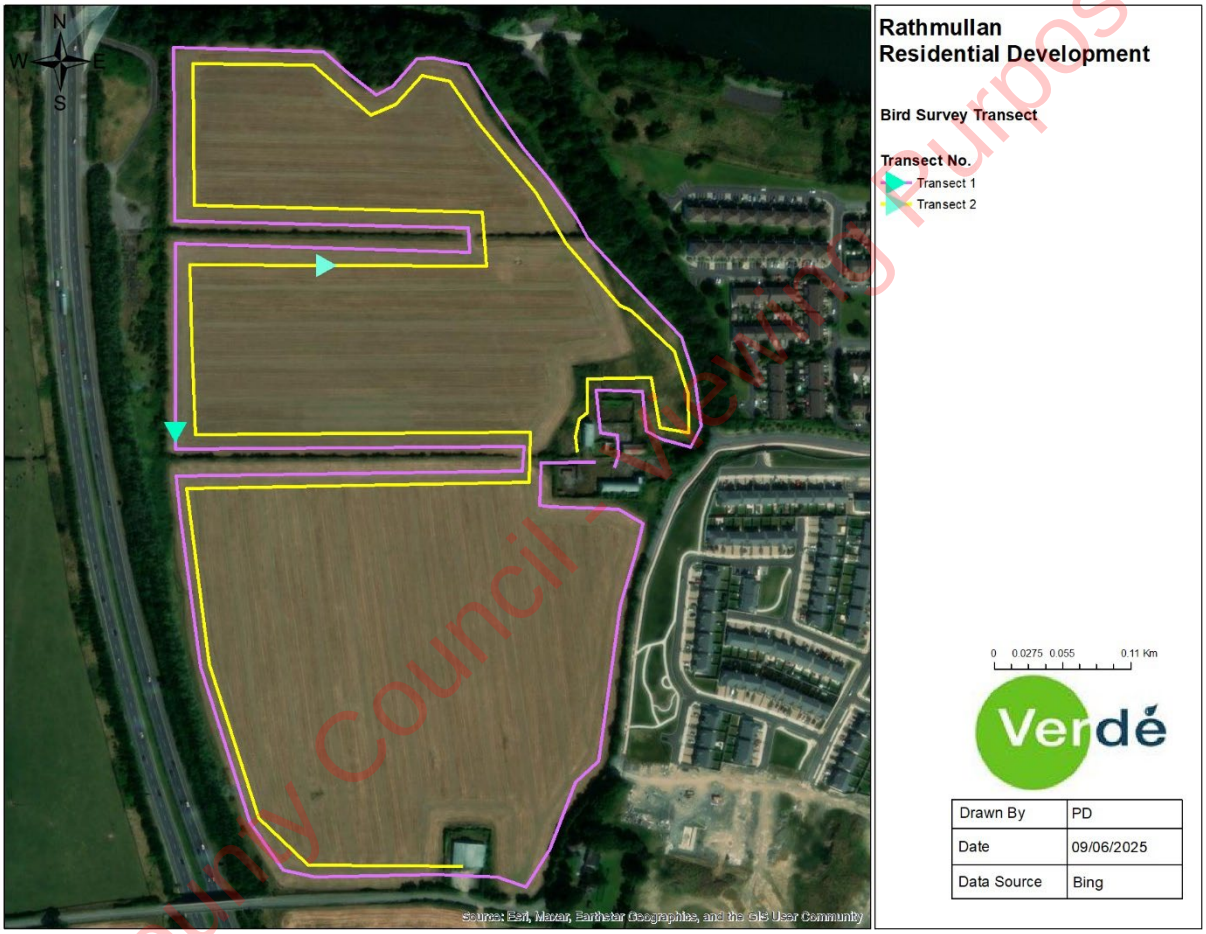
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of waterbirds at the Proposed Development site. Based on the survey effort required for low tide surveys and the survey effort used to inform other large-scale projects it is considered that the survey effort undertaken to establish the use of the Proposed Development site by terrestrial waders or other waterbirds provides a robust evidence base for the examination of this aspect and is representative of best scientific information.

*Figure 5.1 Direction and layout of bat survey transects conducted at the Rathmullan Proposed Development site*

### 5.2.3 Bat Surveys

An appraisal of habitats occurring within the Proposed Development site for their potential to support bat species was completed during the initial field surveys in January 2021 and again




during May 2022; June 2024; and April 2025. The habitats on site were also appraised for their potential to function as a commuting and foraging habitat for bats. This appraisal was undertaken in line with guidance outlined by Collins et al. (2016 & 2023). The structures occurring within and adjacent to the Proposed Development site were appraised for their potential to function as roost sites for bats. Marnell (2022) provides guidance on assessing the potential for structures to support roosting bats. This guidance identifies a variety of factors that increase or decrease the potential of a structure to function as a bat roost. These factors are outlined in Table 5-3 below.

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*Table 5-3 Factors affecting the potential of a building to support a bat roosts, as described by Marnell et al. (2022)*

| | |
|---|---|
| **Increase Potential** | Disused or little used; largely undisturbed<br>Large roof void with unobstructed flying spaces<br>Large dimension roof timbers with cracks, joints and holes<br>Uneven roof covering with gaps, though not too draughty<br>Entrances that bats can fly in through<br>Hanging tiles or wood cladding, especially on south-facing walls<br>Rural setting<br>Close to woodland and/or water<br>Pre-20th century or early 20th century construction<br>Roof warmed by the sun |
| **Decrease Potential** | Urban setting or highly urbanised area with few feeding places<br>Small or cluttered roof void<br>Heavily disturbed<br>Modern construction with few gaps around soffits or eaves<br>Prefabricated with steel sheet materials<br>Active industrial premises<br>Roof shaded from the sun |

The daytime inspections of structures were completed on the 24th May, 10th June and 28th July 2022; and again in June 2024 and April 2025. Dedicated bat activity surveys were completed on site on the 24th May and 10th June 2022 and the 25th June and 18th July 2024. This involved roost emergence surveys at the structure on site as well as continuous static detector monitoring at the Proposed Development site between the 24th May and the 10th July 2022 and again between the 25th June and 7th July 2024.

During the 2022 survey one Song Meter SM4 Full Spectrum bat detector was deployed on site to monitoring bat activity continuously during the monitoring completed between these dates. The static bat detector was positioned along hedgerow habitat and an agricultural shed within the Proposed Development site. The static detector was mounted at a height of 3m above the ground and was set to recorded bat activity continuously throughout each night of the monitoring period, with recording commencing at 30 minutes prior to sunset and 30 minutes after sunrise.

During the 2024 survey two Song Meter SM4 Full Spectrum bat detectors were deployed on site. The 2024 monitoring point No. 2 was as per the 2022 monitoring point described above. The monitoring point No. 1 was positioned towards the west of the site along a field boundary hedgerow.

Roost emergence surveys were completed at the structures occurring at the Proposed Development site during the 2022 and 2024 bat activity seasons. The emergence surveys were completed during the 2022 season on the 24th May and 10th June. These emergence surveys focused on surveying the structures at the farmyard complex at the centre-east of the site. A survey position was taken up on the hardstanding between the farm structures so that a view of all structures was afforded during the survey. The emergence survey commenced 30 minutes prior to sunset and continued for 90 minutes after sunset.

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Roost surveys were again completed during the 2024 bat activity season, on the 24th June and 18th July. The emergence survey on the 25th June was completed at the farmyard complex at the centre-east of the site. The survey position was as per the 2022 survey. The 18th July survey was completed at the agricultural shed adjacent to the southern boundary of the site. The emergence survey commenced 30 minutes prior to sunset and continued for 90 minutes after sunset.

A manual transect survey was also completed during the manual survey on the 24th May 2022 (transect 1) and the 10th June 2022 (transect 2), following the completion of the roost emergence survey at the remaining structure on site. The transect route is shown on Figure 5-1.

The manual transect survey was repeated during on the 25th June 2024 and 18th July 2024.

Bat calls recorded by the SM4 Bat detectors during the automatic bat monitoring sessions were analysed using Kaleidoscope Pro (v. 5.4.1 (for 2022 data and v. 5.7.0 for 2024 data) software. Kaleidoscope automatic bat identification software was used to assign bat calls to species level. Bat calls assigned to Myotis species were grouped together under the Myotis genus.

Additional guidance was sourced from the following;

- Marnell, Kelleher, Mullen (2022) Bat mitigation guidelines for Ireland V2. Irish Wildlife Manuals, No. 134. National Parks and Wildlife Service, Department of Housing, Local Government and Heritage, Ireland.
- CIEEM (2021) Mitigation Guidelines: A guide to impact assessment, mitigation and compensation for developments affecting bats. Beta version. Chartered Institute of Ecology and Environmental Management,
- CIEEM (2018) Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal, and Marine. Chartered Institute of Ecology and Environmental Management
- Department of Housing, Planning and Local Government (DHPLG - 2018). Urban Development and Building Heights Guidelines for Planning Authorities
- Bat Conservation Trust (2022) Interim Guidance Note: Use of night vision aids for bat emergence surveys and further comment on dawn surveys.

## 5.3 The Existing and Receiving Environment (Baseline)

### 5.3.1 Habitats

The following sub-sections describe the habitats occurring within and surrounding the Proposed Development site. Each habitat described below has been identified to Level 3 of Fossitt's Guide to Habitats in Ireland. The alpha-numeric code for each habitat is also provided alongside the habitat name (e.g. hedgerow WL1). The locations and extent of each habitat described below are illustrated in Figure 4.5: Habitat Map. The habitats occurring within the Proposed Development site boundary include:

**Arable Land (BC1)**

Arable land dominates the land cover within the Proposed Development site. This habitat supported a crop of barley (*Hordeum vulgare*) during field surveys. The crop is harvested during the summer months and the fields in which the Proposed Development site is located

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is then treated as a winter stubble field prior to subsequent sowing. It was previously used as horticultural land (BC2) for the production of broad beans (*Vicia faba*). This habitat is subject to intensively agricultural management with tilling, nutrient and herbicide application forming part of the management activities.

**Buildings and artificial surfaces (BL3)**

Structures occur to the south of the Proposed Development site. These are representative of farm structures that are in a general state of disrepair with gaps and missing sheets associated with the corrugated roofs. Paved surfaces occur at the farmyard and this land cover is also representative of this habitat type.

**Dry meadows and grassy verges (GS2)**

Dry meadows and grassy verges habitats occur to the east of the Proposed Development site between the Proposed Development site and the Rathmullan Road. It occurs on steeper east facing slopes within the Proposed Development site. These are grasslands that are infrequently managed through cutting or grazing. Species included cock's-foot (*Dactylis glomerata*), bent grasses (*Agrostis spp.*), common couch (*Elytrigia repens*) and Yorkshire fog (*Holcus lanatus*) false oat-grass (*Arrhenatherum elatius*), fescues (*Festuca spp.*) and perennial rye-grass (*Lolium perenne*). Herbs included winter heliotrope (Petasites pyrenaicus), nettle (*Urtica dioica*) plantain (Plantago lanceolata), wild carrot (Daucus carota). common knapweed (*Centaurea nigra*), common nettle (*Urtica dioica*), cleavers (*Galium aparine*), willowherb species (Epilobium sp.) and meadow buttercup (*Ranunculus acris*). Invading scrub and tree species include gorse (*Ulex europaeus*), bramble (*Rubus fruticosus agg.*) and eared willow (*Salix aurita*) also occur.

**Oak-Ash-Hazel Woodland (WN2)**

Oak-Ash-Hazel Woodland (WN2) is present along the northern and north-eastern boundary of the Proposed Development site on a steeper north and northeast facing gradients that slope down to Rathmullan Road. This is the most important habitat on the subject lands as it is suitable habitat to support mammal species such as deer, badgers and foxes. This habitat is dominated by ash (*Fraxinus excelsior*), hazel (*Corylus avellana*) and English elm (*Ulmus procera*). Other tree species present include pedunculate oak (*Quercus robur*), beech (*Fagus sylvatica*), sycamore (*Acer pseudoplatanus*). The understorey comprises elder (*Sambucus nigra*), hawthorn (*Crataegus monogyna*) and bramble (*Rubus fruticosus agg*). The canopy cover was heavy resulting in a diminished ground flora dominated by mosses, ferns and common ivy (*Hedera helix*). The ferns present included lady-fern (*Athyrium fliix-femina*), soft shield-fern (*Polystichum setiferum*) and Hart's tongue (*Asplenium scolopendrium*). Mosses (*Plagiomnium undulatum*), and (*Thuidium tamariscinum*) on the floor of the habitat, (*Mnium hornum*), (*Isothecium alopecuroides*), and (*Neckra complanate*) on the bases of the trees and (*Bryum argentums*) on rocks. Ground flora identified included herb robert (*Geranium robertianum*), herb bennet (*Geum urbanum*), opposite leaved golden saxifrage (*Chrysosplenium oppositifolium*), meadow buttercup (*Ranunculus acris*), primrose (*Primula vulgaris*), honeysuckle (*Lonicera periclymenum*) and lords and ladies (*Arum maculatum*). Cow parsley (*Anthriscus sylvestris*) and ground elder (*Aegopodium podagraria*) were noted within the habitat closer to the road. This habitat corresponds to the Irish Vegetation Community WL2C *Fraxinus excelsior-Acer pseudoplatanus* woodland, which is a relatively species-poor woodland type. Analysis of the relevé data against definitions of EU annex I habitats

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determined that the woodland does not correspond to [91E0] Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (*Alno-Padion, Alnion incanae, Salicion albae*), due to the absence of typical species for the habitat.

**Scrub (WS1)**

Scrub habitat has development along the boundary of the oak-ash-hazel woodland. This scrub habitat is entirely dominated by stands of spreading (*Rubus fruticosus agg*).

**Hedgerow (WL1)**

Hedgerows within the Proposed Development area running north to south along the eastern boundary of the Proposed Development site and east to west, separating fields, through the Proposed Development site. These hedgerows are evaluated as being of moderate value (local importance- higher value). These hedgerows are classified as important for several reasons including their dense ground cover, their role as a wildlife corridor connecting the woodland in the north of the lands with other habitats in the surrounding environment, the fact they are composed of mainly native species, and their advanced age. Tree and shrub species present in the hedgerow include hawthorn (*Crataegus monogyna*), elder (*Sambucus nigra*), ash (*Fraxinus excelsior*), sycamore (*Acer pseudoplatanus*) and bramble (*Rubus fruticosus agg)*. Ground flora present includes common nettle Urtica dioica, greater burdock (*Arctium lappa)*, cock's foot (*Dactylis glomerata*) and cleavers (*Galium aparine*).

**Habitats Outside the Proposed Development Site**

Other habitats occurring outside the Proposed Development site include a mosaic of treeline and ornamental and non-native scrub to the west, parallel to the M1 motorway; tall herb swamp along the southern riparian fringe of the River Boyne to the north of the Rathmullan Road, and the River Boyne which is representative of a tidal river. A minor stream, the Sheepstown Stream is located to the east of the Proposed Development site, along the eastern side of the Rathmullan Road. This stream is culverted for most of its length to the east of the road. It emerges from the culvert approximately 100m upstream of its confluence with the River Boyne. No aquatic plants were noted within the channel or on the banks. Plant species noted were typical of those of the surrounding habitat types.

An example of Alluvial woodland habitat occurs to the north of the Proposed Development site at Yellow Island. This Alluvial woodland is representative of the Alluvial woodland qualifying habitat of the River Boyne and River Blackwater SAC.

### 5.3.2 Fauna – Desktop Study

**Bird Species**

The desktop review of available information obtained from the National Biodiversity Data Centre between 2015 and 2025 revealed the confirmed observation of 38 bird species within the 4km$^2$ grid squares. Of these 38 species, 20 are listed as protected species. Table 5-4 provides an overview of bird species observed within the 2km grid squares. Records encompass confirmed sightings of bird species over the past 10 years, specifically to give context on when certain species where last observed within the general vicinity of the Proposed Development site.

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*Table 5-4 Summary of bird sighting records within grid squares O07M and O07S, 2015-2025*

| Common Name | Species Name | Count | Last Record | Conservation Status |
|---|---|---|---|---|
| Blackbird | *Turdus merula* | 7 | 08/02/2018 | |
| Blackcap | *Sylvia atricapilla* | 3 | 18/11/2022 | |
| Black-headed Gull | *Chroicocephalus ridibundus* | 4 | 22/05/2018 | Protected Species: Wildlife Acts \|\| Threatened Species: Birds of Conservation Concern \|\| Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Red List |
| Blue Tit | *Cyanistes caeruleus* | 1 | 13/11/2016 | |
| Buzzard | *Buteo buteo* | 1 | 13/09/2017 | |
| Chaffinch | *Fringilla coelebs* | 6 | 08/02/2018 | |
| Common Gull | *Larus canus* | 1 | 13/11/2016 | Protected Species: Wildlife Acts \|\| Threatened Species: Birds of Conservation Concern \|\| Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List |
| Cormorant | *Phalacrocorax carbo* | 4 | 22/05/2018 | Protected Species: Wildlife Acts \|\| Threatened Species: Birds of Conservation Concern \|\| Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List |
| Dunnock | *Prunella modularis* | 2 | 08/02/2018 | |
| Goldfinch | *Carduelis carduelis* | 3 | 12/02/2021 | |
| Great Black-backed Gull | *Larus marinus* | 1 | 22/05/2018 | Protected Species: Wildlife Acts \|\| Threatened Species: Birds of Conservation Concern \|\| Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List |
| Great Northern Diver | *Gavia immer* | 1 | 30/12/2020 | Protected Species: Wildlife Acts \|\| Protected Species: EU Birds Directive \|\| Protected Species: EU Birds Directive >> Annex I Bird Species |
| Greenshank | *Tringa nebularia* | 1 | 31/12/2011 | Protected Species: Wildlife Acts \|\| Threatened Species: Birds of Conservation Concern \|\| Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List |
| Grey Heron | *Ardea cinerea* | 3 | 25/04/2021 | |
| Grey Wagtail | *Motacilla cinerea* | 1 | 13/11/2016 | |
| Herring Gull | *Larus argentatus* | 4 | 22/05/2018 | Protected Species: Wildlife Acts \|\| Threatened Species: Birds of Conservation Concern \|\| Threatened Species: Birds of Conservation Concern |

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| Common Name | Species Name | Count | Last Record | Conservation Status |
|---|---|---|---|---|
| | | | | >> Birds of Conservation Concern - Red List |
| Hooded Crow | *Corvus cornix* | 2 | 08/02/2018 | |
| House Sparrow | *Passer domesticus* | 2 | 08/02/2018 | Protected Species: Wildlife Acts \|\| Threatened Species: Birds of Conservation Concern \|\| Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List |
| Kestrel | *Falco tinnunculus* | 1 | 28/02/2016 | Protected Species: Wildlife Acts \|\| Threatened Species: Birds of Conservation Concern \|\| Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List |
| Lapwing | *Vanellus vanellus* | 2 | 18/11/2022 | Protected Species: Wildlife Acts \|\| Protected Species: EU Birds Directive \|\| Protected Species: EU Birds Directive >> Annex II, Section II Bird Species \|\| Threatened Species: Birds of Conservation Concern \|\| Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Red List |
| Little Egret | *Egretta garzetta* | 3 | 25/04/2021 | Protected Species: Wildlife Acts \|\| Protected Species: EU Birds Directive \|\| Protected Species: EU Birds Directive >> Annex I Bird Species |
| Little Grebe | *Tachybaptus ruficollis* | 1 | 13/09/2017 | Protected Species: Wildlife Acts \|\| Threatened Species: Birds of Conservation Concern \|\| Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List |
| Magpie | *Pica pica* | 2 | 12/02/2021 | |
| Mallard | *Anas platyrhynchos* | 3 | 08/02/2018 | Protected Species: Wildlife Acts \|\| Protected Species: EU Birds Directive \|\| Protected Species: EU Birds Directive >> Annex II, Section I Bird Species \|\| Protected Species: EU Birds Directive >> Annex III, Section I Bird Species |
| Moorhen | *Gallinula chloropus* | 1 | 31/03/2024 | |
| Mute Swan | *Cygnus olor* | 2 | 13/11/2016 | Protected Species: Wildlife Acts \|\| Threatened Species: Birds of Conservation Concern \|\| Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List |
| Pied Wagtail | *Motacilla alba yarrellii* | 1 | 12/02/2021 | |
| Robin | *Erithacus rubecula* | 5 | 12/02/2021 | |

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| Common Name | Species Name | Count | Last Record | Conservation Status |
|---|---|---|---|---|
| Rook | *Corvus frugilegus* | 2 | 01/01/2021 | |
| Skylark | *Alauda arvensis* | 2 | 28/05/2018 | Protected Species: Wildlife Acts \|\| Threatened Species: Birds of Conservation Concern \|\| Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List |
| Song Thrush | *Turdus philomelos* | 6 | 08/02/2018 | |
| Spotted Flycatcher | *Muscicapa striata* | 3 | 23/08/2019 | Protected Species: Wildlife Acts \|\| Threatened Species: Birds of Conservation Concern \|\| Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List |
| Starling | *Sturnus vulgaris* | 2 | 22/05/2018 | Protected Species: Wildlife Acts \|\| Threatened Species: Birds of Conservation Concern \|\| Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List |
| Swallow | *Hirundo rustica* | 1 | 22/05/2018 | Protected Species: Wildlife Acts \|\| Threatened Species: Birds of Conservation Concern \|\| Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List |
| Swift | *Apus apus* | 2 | 18/07/2022 | Protected Species: Wildlife Acts \|\| Threatened Species: Birds of Conservation Concern \|\| Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List |
| Whitethroat | *Curruca communis* | 1 | 19/05/2021 | |
| Wren | *Troglodytes troglodytes* | 3 | 12/02/2021 | |
| Yellowhammer | *Emberiza citrinella* | 7 | 07/09/2018 | Protected Species: Wildlife Acts \|\| Threatened Species: Birds of Conservation Concern \|\| Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Red List |

**Non-Volant Mammals**

The desktop review of available information obtained from the NBDC revealed the confirmed observation of 15 mammal species within the 4km$^2$ grid squares, including 6 bat species. NBDC records include for the two grid squares include records of Pine Martin and Grey Squirrel, both critically endangered mammals in Ireland. However, records of these species were last confirmed in 2018 and 1981, respectively. Table 5-5 provides an overview of records of mammal sightings within the 2km grid squares O07M and O07S. Records encompass confirmed sightings of mammal species over the past 30 years, specifically to give context on

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when certain species where last observed within the general vicinity of the Proposed Development site.

*Table 5-5 Summary of mammal sighting records within grid squares O07M and O07S, 1981 – 2025 (Yellow = records > 10 years old; Orange = records > 15 years old)*

| Common Name | Species Name | Count | Last Record | Conservation Status |
|---|---|---|---|---|
| American Mink | *Neovison vison* | 1 | 01/03/2015 | Invasive Species: Invasive Species \|\| Invasive Species: Invasive Species >> High Impact Invasive Species \|\| Invasive Species: Invasive Species >> Regulation S.I. 477 (Ireland) |
| Badger | *Meles meles* | 5 | 30/07/2015 | Protected Species: Wildlife Acts |
| Otter | *Lutra lutra* | 2 | 16/09/2018 | Protected Species: EU Habitats Directive \|\| Protected Species: EU Habitats Directive >> Annex II \|\| Protected Species: EU Habitats Directive >> Annex IV \|\| Protected Species: Wildlife Acts |
| Pine Marten | *Martes martes* | 3 | 07/08/2018 | Protected Species: EU Habitats Directive \|\| Protected Species: EU Habitats Directive >> Annex V \|\| Protected Species: Wildlife Acts |
| Grey Squirrel | *Sciurus carolinensis* | 1 | 11/06/1981 | Invasive Species: Invasive Species \|\| Invasive Species: Invasive Species >> High Impact Invasive Species \|\| Invasive Species: Invasive Species >> EU Regulation No. 1143/2014 \|\| Invasive Species: Invasive Species >> Regulation S.I. 477 (Ireland) |
| Hedgehog | *Erinaceus europaeus* | 7 | 24/04/2022 | Protected Species: Wildlife Acts |
| Irish Hare | *Lepus timidus subsp. hibernicus* | 2 | 02/08/2018 | |
| Rabbit | *Oryctolagus cuniculus* | 2 | 07/02/2015 | Invasive Species: Invasive Species \|\| Invasive Species: Invasive Species >> Medium Impact Invasive Species |
| Brown Long-eared Bat | *Plecotus auritus* | 2 | 14/09/2017 | Protected Species: EU Habitats Directive \|\| Protected Species: EU Habitats Directive >> Annex IV \|\| Protected Species: Wildlife Acts |
| Common Pipistrelle | *Pipistrellus pipistrellus sensu stricto* | 1 | 13/05/2003 | |
| Daubenton's Bat | *Myotis daubentonii* | 1 | 13/09/2017 | Protected Species: EU Habitats Directive \|\| Protected Species: EU Habitats Directive >> Annex IV \|\| Protected Species: Wildlife Acts |
| Leisler's Bat | *Nyctalus leisleri* | 6 | 13/09/2017 | Protected Species: EU Habitats Directive \|\| Protected Species: EU Habitats Directive >> Annex IV \|\| Protected Species: Wildlife Acts |
| Soprano Pipistrelle | *Pipistrellus pygmaeus* | 10 | 14/09/2017 | Protected Species: EU Habitats Directive \|\| Protected Species: EU Habitats Directive >> Annex IV \|\| Protected Species: Wildlife Acts |

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| Common Name | Species Name | Count | Last Record | Conservation Status |
|---|---|---|---|---|
| Pipistrelle | *Pipistrellus pipistrellus sensu lato* | 3 | 04/06/2015 | Protected Species: EU Habitats Directive \|\| Protected Species: EU Habitats Directive >> Annex IV \|\| Protected Species: Wildlife Acts |
| Red Deer | *Cervus elaphus* | 1 | 15/06/2015 | Protected Species: Wildlife Acts |

**Herpetofauna**

The desktop review of available information obtained from the NBDC revealed the confirmed observation of two herpetofauna species within the 4km$^2$ grid squares. NBDC records for the 2 grid squares include common lizard and the invasive terrapin turtle. However, records of common lizard were last confirmed in 1974. Table 5-6 provides an overview of records of herpetofauna sightings within the 2km grid squares O07M and O07S.

*Table 5-6 Summary of herpetofauna sighting records within grid squares O07M and O07S (Yellow = records > 10 years old; Orange = records > 15 years old)*

| Common Name | Species Name | Count | Last Record | Conservation Status |
|---|---|---|---|---|
| Common Lizard | Zootoca vivipara | 1 | 01/09/1974 | Protected Species: Wildlife Acts |
| Slider Terrapins | Trachemys | 1 | 24/03/2012 | National Invasive Species Database |

### 5.3.3 Fauna – *In-Situ* Surveys

**Birds**

A range of bird species were observed on and near the Proposed Development site between 2021 and 2025. Of note was the presence of two species of high conservation concern (i.e. Red-listed species), namely Meadow Pipit and Yellowhammer at and near the Proposed Development site during the breeding season surveys completed between 2022 and 2025.

A pair of buzzards were observed to be present within the general vicinity of the Proposed Development site, with a nest site being located to the north of the Proposed Development site (i.e., on the Northern bank of the River Boyne).

The red-listed breeding species Yellowhammer was confirmed to be present (via calls) within the northeastern portion of the Proposed Development site during the 2022 and 2025 in-situ surveys. Yellowhammer were identified within the linear woodland along the western portion of the development site in 2022 and was identified as probably breeding within boundary hedging during the 2022 breeding season. Yellowhammer were heard calling to the northeast of the Proposed Development site during the April 2025 survey. No Yellowhammer were seen or heard on site during the May 2025 bird survey. This species was heard calling and singing in the arable field to the south of the Proposed Development site, south of Rathmullan Road. Given the presence of Yellowhammer within the Proposed Development site during the 2025, with one male recorded in suitable breeding habitat, this species is considered to be a possible breeder within the Proposed Development site for the 2025 breeding season. Proposed Development

Similarly, vocal calls of Meadow Pipit were heard in the southwest corner of the development site during the April 2025 and May 2025 survey. Both calls were fleeting with no Meadow Pipit

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observed singing or displaying on site during these surveys. No evidence of breeding Meadow Pipit within the boundaries of the Proposed Development site.

For all other bird species recorded on / near the Proposed Development site, the distribution of bird species was confined to the woodland along the western boundary, and the scrub and woodland along the Northeastern boundary of the site. Bird activity typically decreased along the Southern portion of the site, with Wren, Song Thrush and Blackbird being the only species recorded along the southern portion of the site. No ground nesting birds were flushed from arable land during transects through this habitat. Table 5-7, below, provides a summary of bird species confirmed to occur on / near the site during in-situ bird surveys (2022 – 2025).

*Table 5-7 Overview of bird count data across the various surveys (2022 – 2025)*

| Common Name | Species Name | Survey Date | BoCCI Status |
|---|---|---|---|
| Blackbird | *Turdus merula* | May/June 2022 | Green |
| Chaffinch | *Fringilla coelebs* | May/June 2022 | Green |
| Chiffchaff | *Phylloscopus collybita* | May/June 2022 | Green |
| Dunnock | *Prunella modularis* | May/June 2022 | Green |
| Goldfinch | *Carduelis carduelis* | May/June 2022 | Amber |
| Greenfinch | *Chloris chloris* | May/June 2022 | Amber |
| Robin | *Erithacus rubecula* | May/June 2022 | Green |
| Wren | *Troglodytes troglodytes* | May/June 2022 | Green |
| Swallow | *Hirundo rustica* | May/June 2022 | Amber |
| Wood pigeon | *Columba palumbus* | May/June 2022 | N/A |
| Pheasant | *Phasianus colchicus* | May/June 2022 | Green |
| Blue Tit | *Cyanistes caeruleus* | December 2024 | Green |
| Black-headed Gull | *Chroicocephalus ridibundus* | December 2024 | Amber |
| Buzzard | *Buteo buteo* | December 2024 | Green |
| Cormorant | *Phalacrocorax carbo* | December 2024 | Amber |
| Common Gull | *Larus canus* | December 2024 | Amber |
| Hooded Crow | *Corvus cornix* | December 2024 | Green |
| Robin | *Erithacus rubecula* | December 2024 | Green |
| Rook | *Corvus frugilegus* | December 2024 | Green |
| Starling | *Sturnus vulgaris* | December 2024 | Green |
| Wood pigeon | *Columba palumbus* | December 2024 | Green |
| Buzzard | *Buteo buteo* | April 2025 | Amber |
| Meadow Pipit | *Anthus pratensis* | April 2025 | Red |
| Yellowhammer | *Emberiza citrinella* | April 2025 | Red |

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| Common Name | Species Name | Survey Date | BoCCI Status |
|---|---|---|---|
| Herring Gull | *Larus argentatus* | April 2025 | Amber |
| Swallow | *Hirundo rustica* | April 2025 | Amber |
| Starling | *Sturnus vulgaris* | April 2025 | Amber |
| Skylark | *Alauda arvensis* | April 2025 | Amber |
| Willow warbler | *Phylloscopus trochilus* | April 2025 | Amber |
| Goldcrest | *Regulus regulus* | April 2025 | Amber |
| Wren | *Troglodytes troglodytes* | April 2025 | Green |
| Blue tit | *Cyanistes caeruleus* | April 2025 | Green |
| Great tit | *Parus major* | April 2025 | Green |
| Blackcap | *Sylvia atricapilla* | April 2025 | Green |
| Whitethroat | *Sylvia communis* | April 2025 | Green |
| Blackbird | *Turdus merula* | April 2025 | Green |
| Song thrush | *Turdus philomelos* | April 2025 | Green |
| Chiffchaff | *Phylloscopus collybita* | April 2025 | Green |
| Dunnock | *Prunella modularis* | April 2025 | Green |
| Wood Pigeon | *Columba palumbus* | April 2025 | Green |
| Magpie | *Pica pica* | April 2025 | Green |
| Rook | *Corvus frugilegus* | April 2025 | Green |
| Robin | *Erithacus rubecula* | April 2025 | Green |

**Non-Breeding Season Waterbird Surveys**

Wintering wetland bird species such as golden plover, lapwing, greylag goose, herring gull and lesser-black backed gull as well as other waterbirds are known to rely on and / or opportunistically use grassland and arable land for feeding and roosting. These species generally prefer to use areas of open and expansive grassland and arable land for feeding and roosting (FAS, 2017) and are less associated with enclosed and small field sizes (Milsom et al. 1998).

Wintering waterbirds that forage on grassland habitats prefer short sward grassland, with the optimum height for species such as golden plover and lapwing reported to be around 7cm tall (Gillings & Fuller, 1999). Gregory (1987) found lapwing avoided habitats with swards more than 10cm in height, while Milsom *et al.* (1998) demonstrated that both golden plover and lapwing preferred to feed in fields that had been mown twice rather than once during the season and virtually avoided unmown fields. The sward conditions within the Proposed Development site during all surveys between January 2021 and February 2023 were representative of short sward winter stubble that provides suitable foraging habitat for these species.

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The regular presence of buzzards over the Proposed Development site (observed during site visits in January, February, April, November, 2021; January 2022 and February 2023) is likely to undermine the likelihood of the Proposed Development site and surrounding area being used as a foraging habitat by waterbirds such as golden plover, lapwing or greylag goose.

During all surveys (2021 – 2025), no special conservation interest bird species of the Boyne Estuary SPA, River Boyne and River Blackwater SPA, or North-West Irish Sea were observed foraging, roosting or loafing within the Proposed Development site or the surrounding area during all winter season surveys. No other waterbird species were recorded at the Proposed Development site during all surveys. In addition, no Kingfisher (the special conservation interest bird species of the River Boyne and River Blackwater SPA) were observed at the Proposed Development site during surveys. Kingfisher are commonly found along watercourses and along the banks of estuaries along steep banks and / or overhanging perches (NPWS, 2024; birds.ie, 2025). The River Boyne is located c. 50 m of the proposed development site, whilst the proposed development site does not exhibit any steep banks, overhanging perches or vantage points over watercourses that would provide supporting habitat for Kingfisher. Moreover, there are no supporting breeding habitats (i.e., mud banks or similar habitats) within the boundary of the proposed development site. Based upon the results of the field surveys, the Proposed Development site does not function as a terrestrial habitat relied upon by special conservation interest bird species or waterbirds of the above five listed SPAs.

**Non-Volant Mammals**

Two mammal entrances, indicative of badger entrances and a badger sett were recorded within the woodland habitat on the north facing slope. One of the entrances is located within the Proposed Development site, whilst the other is located to the west of the Proposed Development site. The entrance within the Proposed Development site is situated at a location in the woodland that is subject to informal recreational activity. No definitive evidence indicating the presence of badgers at this entrance was noted during the survey completed on survey dates between May and July 2022 and again during February 2023. Both entrances were sticked firmly with twigs to monitor the movement of mammal traffic in an out of the entrances. The sticks remained in-situ during the surveys between May and July, indicating an absence of mammal traffic in and out of the entrances.

The sett entrances were monitored on a monthly basis between June 2024 and May 2025. The entrances were sticked during each survey. Sticks were removed between the June and July 2024; July and August 2024; August and September 2024 surveys. Sticks remained in-situ between consecutive months during all other surveys. The results of the monitoring indicates that the sett is not representative of a main sett and is likely to be used sporadically by the local badger population as an annexe/outlier sett.

Based upon the results of the monitoring at these entrances they are assessed as being representative of outlier/subsidiary setts for the local badger population.

Continued ecological monitoring of the site has been completed between 2023 and August 2025. Between April and August 2025, the location and immediate surrounds of the previously identified badger setts location have been monitored by a qualified ecologist. These monthly ecological surveys have revealed no further evidence for the active use of the badger setts nor any evidence suggesting the regular / persistent movement of badger in the vicinity of the

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previously identified badger setts. Furthermore, monthly ecological surveys have revealed no evidence to suggest the persistent nor regular us of the site by badger.

Aside from these sett entrances mammal tracks were noted within woodland habitat to the west and east of the Proposed Development site.

**Volant Mammals – Bats**

**Bat Roost Potential of Structures**

The proposed development site offers low availability of potential bat roosting site. Although several individual tall trees are located near the Proposed Development site, these tree specimens do not offer suitable bat roosting potential (i.e. low ivy coverage, lack of holes, etc). Consequently, the principal offerings of bat roosting potential is located within several derelict farm buildings located along the eastern boundary of the Proposed Development site. Based on the Marnell et al. (2022) roost potential assessment criteria, Table 5-8 lists the principal structural features associated with structures in the vicinity of the Proposed Development site that are considered to influence roost potential of these structures.

The corrugated roof material used for the structures, along with the general dilapidated condition of these structures within large voids, draughty and bright interior conditions combine to result in these structures being unsuitable for supporting roosting bats and of low potential for roosting bats.

*Table 5-8 Structural features associated with onsite structures*

| Factors Influencing Roost Potential | Effect on Roost Potential |
|---|---|
| Sheet metal roof | Decreased Potential |
| Dilapidated roof with high levels of light penetration and bright interior conditions during daytime | Decreased Potential |
| Interior of the structure generally not shaded from the sun | Decreased Potential |

**Roost Surveys**

It is noted that a pair of bats were observed roosting at the lean-to concrete building at the eastern end of the farmyard immediately to the south of the Proposed Development site during separate bat survey completed during the 2018 bat activity season. Similarly, a pair of Common pipistrelles were also observed roosting within corrugated farm buildings at the farmyard further to the south and adjacent to the public road. No bats have subsequently been observed roosting in any building facility within the boundary of the Proposed Development site since the initial 2018 bat survey.

The roosting activity recorded during the 2018 bat surveys were adjudged to be representative of transitional or night-time roosts for Common pipistrelle. The buildings were considered to be of low suitability for maternity roosts or for hibernation roosts.

No signs of bat activity were recorded within the farm buildings at the farmyard complex towards the centre-east of the site or at the farm buildings further south and adjacent to the

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public road. No bats were observed emerging from structures at either farmyard during bat emergence surveys completed during the 2022 and 2024 seasons.

The results of the more recent surveys of 2022 and 2024 indicate that the structures on site do not function as roost sites for bats and are not used by the local bat population for roosting. Moreover, subsequent site assessments (2024 – 2025) have found no evidence (evidence of guano or physical sightings) to suggest the presence nor use of structures as bat roosts.

**Manual Bat Detector Survey**

Consistent Common pipistrelle foraging activity was recorded during both manual transects along the northern boundary of the Proposed Development site at the woodland edge and along the edge of the woodland and hedgerow within the Rathmullan Road "depression" along the eastern boundary of the site. Common pipistrelle foraging activity was also recorded during all transect surveys within the farmyard complex immediately to the centre-south of the Proposed Development site boundary.

Leisler's bat and Soprano pipistrelle were also recorded during the manual survey but these species were recorded at lower levels and the calls were fleeting indicative of commuting individuals as opposed to foraging activity.

**2022 Static Detector Monitoring Results**

At least five bat species were recorded during bat surveys at the Proposed Development site. These species include Leisler's bat, Common pipistrelle, Soprano pipistrelle, brown long-eared bat and Myotis species. The number of bat passes per night per species recorded during static monitoring is provided in Table 5-9.

*Table 5-9 Summary of static detector bat monitoring results*

| Date | MYOSPP | NYCLEI | PIPPIP | PIPPYG | PLEAUR | Total / Night |
|---|---|---|---|---|---|---|
| 24/05/2022 | 0 | 1 | 13 | 2 | 0 | 16 |
| 25/05/2022 | 0 | 2 | 38 | 3 | 0 | 43 |
| 26/05/2022 | 0 | 3 | 498 | 4 | 0 | 505 |
| 27/05/2022 | 1 | 12 | 646 | 4 | 4 | 667 |
| 28/05/2022 | 0 | 22 | 516 | 17 | 0 | 555 |
| 29/05/2022 | 0 | 11 | 873 | 8 | 0 | 892 |
| 30/05/2022 | 0 | 21 | 263 | 12 | 0 | 296 |
| 31/05/2022 | 0 | 11 | 342 | 3 | 1 | 357 |
| 01/06/2022 | 0 | 3 | 335 | 5 | 0 | 343 |
| 02/06/2022 | 0 | 1 | 566 | 5 | 0 | 572 |
| 03/06/2022 | 0 | 26 | 643 | 24 | 2 | 695 |
| 04/06/2022 | 0 | 24 | 863 | 26 | 0 | 913 |
| 05/06/2022 | 0 | 21 | 630 | 29 | 1 | 681 |

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| Date | MYOSPP | NYCLEI | PIPPIP | PIPPYG | PLEAUR | Total / Night |
|---|---|---|---|---|---|---|
| 06/06/2022 | 0 | 24 | 544 | 18 | 3 | 589 |
| 07/06/2022 | 0 | 3 | 202 | 6 | 0 | 211 |
| 08/06/2022 | 0 | 1 | 16 | 0 | 0 | 17 |
| 09/06/2022 | 0 | 2 | 128 | 3 | 0 | 133 |
| 10/06/2022 | 0 | 0 | 6 | 0 | 0 | 6 |
| 11/06/2022 | 1 | 1 | 249 | 7 | 5 | 263 |
| 12/06/2022 | 0 | 1 | 3 | 0 | 55 | 59 |
| 13/06/2022 | 0 | 5 | 588 | 12 | 33 | 638 |
| 14/06/2022 | 0 | 1 | 41 | 0 | 6 | 48 |
| 15/06/2022 | 0 | 1 | 450 | 2 | 4 | 457 |
| 16/06/2022 | 0 | 0 | 28 | 0 | 0 | 28 |
| 17/06/2022 | 1 | 43 | 507 | 11 | 2 | 564 |
| 18/06/2022 | 0 | 10 | 416 | 5 | 8 | 439 |
| 19/06/2022 | 0 | 47 | 162 | 6 | 1 | 216 |
| 20/06/2022 | 2 | 30 | 667 | 17 | 38 | 754 |
| 21/06/2022 | 0 | 43 | 561 | 35 | 26 | 665 |
| 22/06/2022 | 0 | 79 | 408 | 37 | 21 | 545 |
| 23/06/2022 | 0 | 25 | 875 | 14 | 70 | 984 |
| 24/06/2022 | 0 | 41 | 137 | 17 | 35 | 230 |
| 25/06/2022 | 0 | 13 | 877 | 12 | 12 | 914 |
| 26/06/2022 | 0 | 10 | 934 | 21 | 9 | 974 |
| 27/06/2022 | 0 | 14 | 498 | 21 | 10 | 543 |

The evaluation of bat activity recorded during static monitoring surveys follows the approach outlined by Kepel (2011) who assigned bat activity based on bat passes per hour as follows:

- Pipistrelle species and Leisler's bat: Low = <3.5 passes per hour; Moderate = 3.6 – 6.5 passes per hour; High = >6.5 passes per hour
- All Other Bat species: Low = <4.0 passes per hour; 4.1 to 10 passes per hour; high = >10 passes per hour.

These categories are applied to the median bat pass per hour per night recorded during monitoring. The median bat pass per hour per night has been recommended by Lintott & Matthews (2018) as the most accurate representation of bat activity as bat activity levels between nights can be highly variable.

Based upon this approach the median bat pass per hour for the five bat taxa recorded during monitoring is provided in Table 5-10 below.

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The analysis of the monitoring shows that activity was low for Myotis species, Leisler's bat, Soprano pipistrelle and brown long-eared bat. Bat activity was very high for Common pipistrelle with a median bat pass per hour of 73.1 passes recorded.

*Table 5-10 Median bat pass / hour and bat activity categories*

| Species | Myotis Species | NYCLEI | PIPPIP | PIPPYG | PLEAUR |
|---|---|---|---|---|---|
| **Median Pass / Hour / Night** | 0.00 | 1.9 | 73.1 | 1.5 | 1.0 |
| **Bat Activity (as per Kepel)** | Low | Low | High | Low | Low |

The high levels of Common pipistrelle are not unexpected at the Proposed Development site given the presence of woodland and scrub habitats on site and the presence of woodland habitat and open grassland areas to the east of the Proposed Development site. Common pipistrelle bats are widespread and abundant in Ireland and are generally encountered during bat activity surveys (NPWS, 2019). Notwithstanding this it is noted that the activity levels recorded during the surveys were indicative of very high foraging activity. Based upon these results and the results of manual surveys completed at the Proposed Development site, the farmyard area and the sheltered Rathmullan Road corridor to the northeast of the farmyard represent preferred bat foraging habitat.

**2024 Static Detector Monitoring Results**

Four bat species were recorded during the 2024 bat surveys at the Proposed Development site. These species include Leisler's bat, Common pipistrelle, Soprano pipistrelle, and brown long-eared bat. The number of bat passes per night per species recorded during static monitoring at monitoring point 1 and 2 are provided in Table 5-11.

*Table 5-11a Summary of static detector bat monitoring results at monitoring point 1*

| Date | MYOSPP | NYCLEI | PIPPIP | PIPPYG | PLEAUR | Total/Night |
|---|---|---|---|---|---|---|
| 20240625 | 0 | 7 | 533 | 16 | 2 | 558 |
| 20240626 | 0 | 20 | 15 | 3 | 3 | 41 |
| 20240627 | 0 | 13 | 24 | 0 | 0 | 37 |
| 20240628 | 0 | 27 | 361 | 35 | 2 | 425 |
| 20240629 | 0 | 5 | 225 | 67 | 0 | 297 |
| 20240630 | 0 | 11 | 146 | 43 | 0 | 200 |
| 20240701 | 0 | 10 | 185 | 13 | 0 | 208 |
| 20240702 | 0 | 30 | 391 | 146 | 1 | 568 |
| 20240703 | 0 | 3 | 112 | 3 | 0 | 118 |
| 20240704 | 0 | 26 | 109 | 21 | 0 | 156 |
| 20240705 | 0 | 19 | 266 | 60 | 0 | 345 |
| 20240706 | 0 | 18 | 407 | 47 | 0 | 472 |
| 20240707 | 0 | 0 | 76 | 2 | 0 | 78 |

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Table 5-11b *Summary of static detector bat monitoring results at monitoring point 2*

| Date | MYODAU | NYCLEI | PIPPIP | PIPPYG | PLEAUR | Total/Night |
|---|---|---|---|---|---|---|
| 20240625 | 0 | 10 | 31 | 13 | 1 | 55 |
| 20240626 | 0 | 7 | 5 | 3 | 0 | 15 |
| 20240627 | 0 | 5 | 8 | 2 | 0 | 15 |
| 20240628 | 0 | 14 | 29 | 65 | 1 | 109 |
| 20240629 | 0 | 2 | 11 | 8 | 0 | 21 |
| 20240630 | 0 | 13 | 19 | 47 | 0 | 79 |
| 20240701 | 0 | 10 | 8 | 31 | 0 | 49 |
| 20240702 | 0 | 25 | 57 | 243 | 0 | 325 |
| 20240703 | 0 | 29 | 8 | 12 | 0 | 49 |
| 20240704 | 0 | 20 | 16 | 61 | 0 | 97 |
| 20240705 | 0 | 4 | 10 | 19 | 0 | 33 |
| 20240706 | 0 | 8 | 16 | 63 | 0 | 87 |
| 20240707 | 0 | 15 | 5 | 30 | 0 | 50 |

Based upon the Kepel approach for classifying bat activity levels the median bat pass per hour for the four bat taxa recorded during monitoring is provided in Table 5-12 below.

The analysis of the monitoring shows that activity was low for Myotis species, Leisler's bat, and brown long-eared bat. Bat activity was very high for Common pipistrelle at monitoring point 1 with a median bat pass per hour of 26.43 passes recorded. Activity for Common pipistrelle was low at monitoring point 2 indicating a concentration of foraging activity for this species in the vicinity of monitoring point 1. Bat activity for Soprano pipistrelle at monitoring point 1 was low, whilst it was medium at monitoring point 2.

*Table 5-12 Median bat pass / hour and bat activity categories*

| Species | Myotis Species | NYCLEI | PIPPIP | PIPPYG | PLEAUR |
|---|---|---|---|---|---|
| Median Pass / Hour / Night at MP1 | 0.00 | 1.86 | 26.43 | 3.00 | 0.00 |
| Median Pass / Hour / Night at MP2 | 0.00 | 1.43 | 1.57 | 4.29 | 0.00 |
| Bat Activity (as per Kepel) | Low | Low | High and Low | Low to Medium | Low |

The high levels of Common pipistrelle are not unexpected at the Proposed Development site given the presence of woodland and scrub habitats on site and the presence of woodland habitat and open grassland areas to the east of the Proposed Development site. Common pipistrelle bats are widespread and abundant in Ireland and are generally encountered during bat activity surveys (NPWS, 2019). Notwithstanding this it is noted that the activity levels

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recorded during the surveys were indicative of very high foraging activity. Based upon these results and the results of manual surveys completed at the Proposed Development site, the farmyard area and the sheltered Rathmullan Road corridor to the northeast of the farmyard represent preferred bat foraging habitat.

**Non-Volant Mammals**

The Proposed Development site does not provide nor offer suitable habitat for otters. However, the River Boyne to the north of the site is a known Otter habitat.

A search of the south bank stretch of the River Boyne, located to the north of the Proposed Development site, during field surveys in January 2022, February 2023 and April 2025 did not reveal the presence of any holts or couches within riparian vegetation along the river.

Two mammal entrances were identified in the woodland habitat to the north of the Proposed Development site, between the Proposed Development site redline boundary and the Rathmullan Road. The entrances, indicative of badger setts, are located in an area that appears to be used as informal recreational / social space. However, no definitive evidence indicating the presence of badgers using these entrances in recent times was recorded during field surveys (2022 – 2025).

The presence of mammal entrances was not noted during previous surveys at the Proposed Development site (in 2018 and 2007). The non-native Fallow deer has previously been recorded within the Proposed Development site, whilst there are records for the presence of badger, red squirrel, otter, pine marten, red deer, hare, stoat and hedgehog for the wider surrounding area.

*Figure 5-2 Habitats and other key ecological receptors identified on / near the Proposed Development site*

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## 5.4 Potential Effect of the Proposed Development

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This section provides a description of the potential impacts that the proposed development may have on biodiversity in the absence of mitigation. Methodology for determining the significance of an impact has been published by the EPA. This is based on the valuation of the ecological feature in question and the scale of the predicted impact. In this way, it is possible to assign an impact significance in a transparent and objective way. The following impact pathways that have been identified as having the potential to give rise to adverse effects towpath European Sites relate to:

- Hydrological pathways arising from surface water and groundwater emissions.
- Noise emissions arising from construction phase works.
- Air emissions arising from construction phase works.
- Mobile species pathways, where the Proposed Development site was identified as supporting suitable habitat for special conservation interest bird species of SPAs listed previously.
- Human distance pathways, where the operation phase of the Proposed Development will result in an increase in the human population in close proximity to the River Boyne and River Blackwater SAC and the River Boyne and River Blackwater SPA, with potential consequences for relevant qualifying species of interest of these two European Sites, namely otters and kingfisher.

The examination of potential adverse effects associated with these pathways is provided in the following subsections below. Details on specific pathways and potential / likely Natura 2000 site receptors can be found within the AA screening and Natura Impact Statement (NIS) reports.

### 5.4.1 Construction Phase

**Effects through Hydrological Pathways / Runoff**

Potential effects that may arise as a result of the Proposed Development relate to the discharge of contaminated surface water from the Proposed Development site during the construction phase of works into the River Boyne and River Blackwater SPA and SAC, and Boyne River Estuary SPA.

Earthworks associated with the construction phase of the development will denude surfaces and potentially generate silt-laden surface water runoff from the Proposed Development site. In the event that surface water generated / accumulated at the construction footprint is of a poor water quality standard or becomes contaminated from construction works, its discharge into the surrounding environment may have potentially deleterious effects on key habitats and watercourses, such as the River Boyne. Additionally, contaminating materials such as oils, fuels, lubricants, other construction related solutions and cement-based products will be used in construction works of the Proposed Development site during the construction phase. Consequently, any accidental emission of such material via surface water runoff or groundwater base flows will ultimately terminate into the River Boyne, which may potentially undermine water quality within the Boyne watercourse and contribute to existing water quality pressures to the transitional waters of the River Boyne and the River Boyne Estuary.

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It is noted that the uncontrolled release of contaminated surface drainage waters from construction site is typically uncommon. Moreover, any subsequent release of contaminated surface water into the River Boyne is afforded a significant dilution effect and is likely to be rapidly diluted and distributed within tidal waters. However, any deposition of contaminants such as hydrocarbons or cement material to the lotic habitats and intertidal habitats further downstream could result in the contamination of benthic fauna and epifauna which form key components of the food web, particularly as prey resources of freshwater qualifying fish species and wetland bird species of the Boyne Estuary SPA.

The toxic effect of such contaminants, particularly hydrocarbons, on feeding, growth, development and reproduction are known to cascade and bioaccumulate throughout the food chain affecting benthic fauna, fish, birds, including Kingfisher and mammal, including otters (Ferrando, 2015).

The significance of the impact of the uncontrolled release of contaminants from the Proposed Development site into watercourses and ultimately downstream into intertidal habitats of the Boyne Estuary and its associated fauna will depend upon the frequency of the release and the concentration of contaminating materials in surface water discharging from the Proposed Development site.

**Effects through Noise and Vibration Emissions**

The construction phase of the Proposed Development will ubiquitously produce noise and vibration emissions (see Chapter 10 “Noise and Vibration”), which may have various impacts on the surrounding environment and the species within. Specifically, Kingfisher and Otters (QIs of the River Boyne SPA) are key ecological receptors that are known to be sensitive to noise and vibration emissions.

The River Boyne is located within 40m of the Proposed Development site boundary but is set back from the developable footprint of the Proposed Development site by approximately 135m. A noise impact assessment prepared for a previous planning application at the Proposed Development site examined the potential for noise impacts to surrounding receptors associated with construction works and found that no significant impacts relating to changes in noise levels would occur within 50m of the construction footprint.

Cutts et al. (2013) published the Waterbird Disturbance Toolkit for examining the potential disturbance effect of construction noise to waterbirds. This toolkit provides a calculation table for determining the distance at which a noise emitting source will reach non-disturbing acceptable levels. The item of plant associated with the construction phase that will have the highest emitting noise level will be a Concrete breaker at 92 dB Laeq (10m from source). Using the Cutts et al. (2013) toolkit the distance at which this noise will be within an acceptable dose level will be approximately 20m. Nature Scotland published a review of disturbance distance for bird species (Goodship and Furniss, 2022) and have identified a disturbance distance of 50m to 100m during both the non-breeding season and breeding season for Kingfisher.

The NRA guidance document Guidelines for The Treatment of Otters Prior To The Construction Of National Road Schemes sets out the zones at which otters are be disturbed by construction activity. This guideline notes that otter holts at which breeding females or cubs are present are at risk of disturbance from construction works, where such works are located within 150m of such a holt. The guideline also notes that any works within 20m of an active but non-breeding holt can result in disturbance to otters and that any light works such as

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digging by hand or scrub clearance within 15m of an otter holt can result in disturbance to otters.

No otter holts or couches have been identified to occur within 150m of the works, suggesting that there is very low potential for construction works to result in disturbance to Otters. Other publications relating the otters also note that this species, away from holt sites, is not sensitive to human disturbance (NPWS, 2009; NPWS, 2021).

Similarly, considering the low volume of bat activity within the boundaries of the development site, as well as the lack of bat roosting activity within the derelict buildings within the boundaries of the Proposed Development site, it is determined that the Proposed Development is unlikely to have significant effects on the conservation objectives of bat species.

Consequently, it is concluded that noise and vibration generated during the construction phase of works will not have low potential to result in disturbance to the Otter and Kingfisher populations of the River Boyne. Moreover, there is no functional noise/vibration impact pathway connecting the Proposed Development site to these features of interest of the River Boyne and River Blackwater SAC and the River Boyne and River Blackwater SPA.

**Effects through Dust and Airborne Pollutant Emissions**

The greatest potential impact on air quality during the construction phase of the Proposed Development is sourced from construction dust emissions and the potential for nuisance dust and PM10/PM2.5 emissions (also see Chapter 8, “Air Quality”. Transport Infrastructure Ireland (TII) (2011) provide guidance for the potential distance for significant effects associated with such emissions to air. This guideline specifies distances according to the scale of a project, which ranges from major (Large construction sites, with high use of haul roads), to moderate (Moderate sized construction sites, with moderate use of haul roads), to minor (Minor construction sites, with limited use of haul roads). For the purposes of this examination a worst-case scenario is adopted with distances associated with a major development being used as part of the examination.

For a major development the TII Guidelines specify a potential distance for significant effects as associated with soiling, PM10 and Vegetation Effects at 100m, 25m and 25m respectively. The boundary of the River Boyne and River Blackwater SAC is located within 100m of the construction footprint and will therefore be susceptible to soiling from dust emissions. However, it is noted that no qualifying habitats or habitats that are relied upon by qualifying species are located within this distance of the SAC. As such these qualifying features of interest of the River Boyne and River Blackwater SAC and the habitat used by Kingfisher will not be affected by air emissions during the construction phase. Notwithstanding this, mitigation measures for avoiding any potential dust soiling impacts to all areas within the River Boyne and River Blackwater SAC are set out in subsequent sections below.

**Effects to Mobile Species and Habitat Connectivity Corridors**

Targeted field surveys were completed at and surrounding the Proposed Development site to identify whether mobile species of conservation interest (SCIs) of surrounding SACs and SPAs rely on the Proposed Development site and whether the Proposed Development site represents an ex-situ habitat for these species. The species for which surveys were completed comprise otters, Kingfisher and a wetland/waterbird species.

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No otters or Kingfisher nor evidence suggesting the presence of these species was recorded within the boundary of nor proximal to the Proposed Development site during the field surveys (2022 – 2025), whilst no suitable supporting habitat for these species occurs within the boundary or immediate surrounds of the Proposed Development site. No wetland birds or waterbirds, such as Golden Plover, Lapwing, Greylag Goose, Herring Gull, or Lesser-Black Backed Gull, or any other wetland/waterbirds were recorded using the Proposed Development site as a foraging, roosting or loafing site during all bird surveys (2022 – 2025).

Consequently, it is concluded that the Proposed Development site does not function as an ex-situ habitat for these species and there is no mobile species pathway connecting the Proposed Development site to SACs or SPAs in the wider surrounding area. The following European Sites were screened in for further examination (as part of this Natura Impact Statement report) due to the potential for a mobile species pathway to connect the Proposed Development to them:

- River Boyne and River Blackwater SAC
- River Boyne and River Blackwater SPA
- Boyne Estuary SPA
- Boyne Coast and Estuary SAC
- North-West Irish Sea SPA
- Boyne River Islands pNHA
- Boyne Coast and Estuary pNHA

Given the absence of a mobile species pathway between the Proposed Development site and these SPAs and SACs there will be no potential for the construction phase of works of the Proposed Development to result in adverse effects to these four European Sites.

**Cumulative Effects**

The potential exists for the Proposed Development to overlap with other construction projects within the Boyne catchment downstream of the Proposed Development site. A review of the Meath and Louth County Council planning portal was completed to identify other recently approved or live planning applications, with which the Proposed Development could combine to result in negative effects to the water quality of the River Boyne and adverse effects to the conservation status of the QIs/SCIs of the River Boyne and River Blackwater SPA and SAC, and Boyne River Estuary SPA. A number of planning applications were identified between the Proposed Development site and the Boyne Estuary in the immediate vicinity of the River Boyne corridor, although most of these planning applications relate to minor projects associated with changes to existing dwellings or commercial buildings. Such projects are of a small scale and are not considered to present a risk of likely significant effects, alone or in-combination with other plans or projects, the River Boyne and River Blackwater SPA and SAC, and Boyne River Estuary SPA. As such only 3 larger scale projects were identified as occurring in the vicinity (< 1km) of or downstream of the Proposed Development site along the River Boyne corridors. These projects are listed below and the potential for the Proposed Development to combine with these projects is also examined.

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*Table 5-9 Summary of approved planning applications proximal to the Proposed Development*

| Application Ref / Application Status | Description | Assessment |
|---|---|---|
| 221718 / Approved (conditional) | The Proposed Development will consist of an update of the existing Drybridge to Platin 110 kV Overhead line (OHL) {approximately 5.6km long and comprising 33no. structures (excluding LCIM 13a and LCIM 14 which are consented under separate planning application) and 2no. gantries between the existing Drybridge 110 kV substation in the townland of Tullyallen, Co. Louth and the existing Platin 110kV substation in the townland of Platin, Co. Meath). The proposed uprate development will comprise: 1) the replacement ("restringing") of the existing overhead line circuit conductor wires with a new higher capacity conductor including installation of a new fibre communication connection, 2) the replacement of 11 No. existing polesets (including 1 No. wooden poleset conversion from strain to suspension poleset structure} and S No towers (4 No steel angle masts and 1 No. steel end mast in Platin 110kV substation, 3) replacement and reorientation of steel end mast in Platin 110kV substation, 4) replacement of gantry in Drybridge 110kV substation, 5) foundation strengthening works at 1 No. steel angle mast, 6) the replacement of steel members at 3 No. steel angle masts, 7) painting of all steel members at 2 No. steel angle masts, 8) replacement of hardware and fittings at all structure locations, 9) replacement and relocation of fibre communication structures | The Proposed Development will traverse over lands to the South, and traversing the landscape to the Northwest of the proposed LRD (this project), and primarily encompasses the installation of replacement infrastructure to support the national electrical grid. A NIS has been prepared for The Proposed Development. The NIS has concluded that, provided all mitigation measures are implemented, The Proposed Development will not, alone or in-combination with other plans or projects, have the potential to result in adverse effects to the River Boyne and River Blackwater SAC, River Boyne and River Blackwater SPA or any other European Sites. Consequently, the replacement of national electrical infrastructure will not have the potential to combine with the Proposed Development to result in cumulative negative effects to the water quality of the River Boyne or adversely affect the integrity of the River Boyne and Estuary European Sites. |
| 2460345 / Approved (conditional) | Permission for the construction of a part single-storey, part two-storey sports facility including a General Purpose Sports Hall, a boxing arena, a fitness suite, social areas, changing rooms, circulation areas, administration areas, stores, service areas and other ancillary accommodation. | The planning application development is located c. 780m east of the Proposed Development. Construction works will occur within an already developed residential property similarly surrounded by various commercial and residential developments. Moreover, there are no watercourses on/proximal to the planning application site. Consequently, it is determined that there is low/no potential for in-combination effects with the LRD (this development) through surface water, noise & vibration or dust effects. |

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| Application Ref / Application Status | Description | Assessment |
|---|---|---|
| 2460266 / Approved (conditional) | The LRD application seeks modifications to the permitted SHD (ABP-311678-21, as amended under P.A. Ref. 2360368) and the application relates to 207no. of the 237no. permitted dwellings and the construction of the crèche as a standalone building (crèche is permitted as integral part of one of the apartment buildings in the permitted development). The modifications proposed do not affect the 30no. permitted dwellings currently under construction (Amendment permission P.A. Ref. 2360368) other than a minor boundary adjustment to the garden boundary of No. 30. The modifications provide for amendments to the design, layout and dwelling types including the omission of two permitted apartment buildings (111no. apartments) with associated modifications to the road layout and distribution of public open space, car parking, site services and site development works including the undergrounding of ESB overhead lines and associated diversion works. The 207no. new house types and apartments proposed have a residential mix of 21no. 1-bed, 49no. 2-bed, 115no. 3-bed & 22no. 4-bed, two and three storey in height in detached, semi-detached and terraced formats. The overall number of dwellings as permitted under the SHD (ABP-311678-21, as amended under P.A. Ref. 2360368) will remain unchanged at 237no. dwellings. The overall permitted dwelling mix will change from 147no. apartments and 90no. houses, to 42no. apartments and 195no. houses. The mix of dwellings within the entire SHD site will be amended from 19no. 1-bed, 96no. 2-bed, 109no. 3-bed and 13no. 4-bed (as permitted under ABP-311678-21 and amended under P.A. Ref. 2360368), to 21no. 1-bed, 49no. 2-bed, 142no. 3-bed and 25no. 4-bed. This planning application also seeks permission for 2no. ESB substations required to serve the Proposed Development. This planning application will be accompanied by a Natura Impact Statement (NIS) | This planning application development is located c. 770m north of the Proposed Development site. A small watercourse traverses along the Eastern boundary of the application site which ultimately flows into the River Boyne c. 900 m downstream from the site. An NIS has been prepared for the planning application, which has concluded that, provided all mitigation measures are implemented, The Proposed Development will not, alone or in-combination with other plans or projects, have the potential to result in adverse effects to the River Boyne and River Blackwater SAC, River Boyne and River Blackwater SPA or any other European Sites. Consequently, it is concluded that this planning application will not have the potential to combine with the Proposed Development to result in cumulative negative effects to the water quality of the River Boyne or adversely affect the integrity of the River Boyne and Estuary European Sites. |

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### 5.4.2 Operational Phase

**Effects through Hydrological Pathways**

During the operational phase surface water generated at the Proposed Development site will discharge via proposed surface water pathways into the River Boyne (see Chapter 7, “Hydrology and Hydrogeology”) . The potential will exist for surface water runoff from car parking areas to be contaminated in the event of fuel leaks or accidental spills. Any untreated discharge of contaminated surface water runoff from the Proposed Development site to the River Boyne could contribute to existing pressures to water quality within the River Boyne and River Blackwater SPA and SAC, and Boyne River Estuary SPA.

**Effects through Noise and Vibration**

Primary sources of noise and vibration emissions will be sourced from typical everyday vehicle traffic as residents of the development ingress/egress, as well as from increased human presence (i.e., physical presence of residents) (see Chapter 10, “Noise and Vibration”). However, these sources of noise and vibration emissions can be deemed to only slightly increase ambient noise levels, and would be dissipated within 50m of source to the surrounding environment.

As such, it can be concluded that there is low/no potential for significant effects to Kingfisher, Otter and wetland/waterbirds identified as QIs of nearby Natura 2000 sites.

**Effects through Dust and Air Emissions**

As per the TII guidelines (TII, 2022; 2024), TII requires the Air Quality Specialist to liaise with an ecologist on schemes where there is a European protected site within 2km of the Proposed Development site. However, as the potential effect of a scheme is limited to local level, detailed consideration need only be given to roads where there is a significant change to traffic flows and the designated site lies within 200m of the road centre line. Where these two requirements are fulfilled, the assessment involves a calculation of nitrogen oxides (NOx) and ammonia ($NH_3$) concentrations to determine the N deposition and acid deposition rates using the methodology set out in TII Guidance document PE-ENV-01106 (TII, 2022).

A review of publicly available information indicates that there are no statutory (international or national) ecological receptors within 200m of any of the link roads identified in Table 8-14 (The River Boyne and River Blackwater SAC is approximately 292m from the link roads identified in Table 8-14). Therefore, assessment of potential effects to ecological receptors has been scoped out and is not considered further in this assessment. As such, a detailed assessment of the potential effects on ecological receptors is not required.

**Effects from Artificial Sources of Light**

None – see lighting report (50m shadow and downward lighting design to minimise overspill)

In light of the above it is concluded that the operational phase of the Proposed Development will not have the potential to result in a functional air impact pathway between the Proposed Development site and the River Boyne European Sites

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**Effects through Human Disturbance**

The operational phase of the Proposed Development will result in an increase in the human population at Rathmullan and in close proximity to the River Boyne. An existing recreational greenway facility is provided along the southern bank of the River Boyne, parallel to the Rathmullan Road. It is likely that this facility will be used as a recreational walking and cycling facility by residents of the Proposed Development during it operation phase.

This greenway facility was subject to a previous planning application, that included an NIS and an Appropriate Assessment completed by the competent authority. The Appropriate Assessment for this greenway concluded that its operation phase would not have the potential to result in adverse effects, alone or in-combination with other plans or projects, to the River Boyne and River Blackwater SAC or the River Boyne and River Blackwater SPA or any other European Sites occurring downstream at the Boyne Estuary. Given the Appropriate Assessment determination for the greenway project, it is concluded that the use of this greenway by residents of the Proposed Development will not have the potential to result in adverse effects to the River Boyne and the associated European Sites or the Boyne Estuary European Sites downstream.

Field surveys revealed the presence of an oak-ash-hazel woodland on the slopes to the north of the Proposed Development site. Whilst this woodland habitat does not represent a qualifying habitat of the SAC it is located within the boundary of the SAC. An increase in the human population in the vicinity of this woodland could result in a further recreational pressure within this woodland habitat. Consequently, appropriate mitigation measures to control the use of this woodland by future occupants have been prepared as part of the recommended mitigations section.

### 5.4.3 Potential Cumulative Effects

There are no projects or planning applications nearby that offer potential to have in-combination effects with the Proposed Development during the operational phase of the project.

### 5.4.4 “Do Nothing” Effect

The current site is primarily comprised of agricultural land bordered by woodland, treelines, scrub and hedgerows. The immediate surrounding landscape to the north, west and south is similarly comprised of agricultural lands, whilst lands to the east of the LRD site are primarily comprised of residential housing estates, interspersed with amenity grasslands and roadways.

A “do-nothing” scenario would not lead to any significant change to the landscape or habitats of the immediate Proposed Development site within the short to medium term.

## 5.5 Avoidance, Remedial and Mitigation Measures

The mitigation measures outlined hereunder are based on established best practice guidelines and will provide effective screening of the Proposed Development for likely effects to habitats, species and associated key ecological receptors generated during the construction phase and operational phases of the Proposed Development. Mitigation measures and environmental safeguards outlined for the construction phase are taken from established best practice guidelines that have been successfully implemented for a wide range of project-level infrastructural developments. These recommended mitigation measures have undergone

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extensive and rigorous monitoring for their effectiveness at development sites where they have previously been applied to ensure beyond reasonable scientific doubt that there will be no adverse effect stemming from the Proposed Development.

The best practice guidance that has informed the mitigation measures herein and the proposed environmental safeguards that should be adhered to throughout the construction and operational phases of the Proposed Development (as recommended by the EA / SEPA / EHS) include,

- PPG 1: Understanding your environmental responsibilities - good environmental practices
- GPP 2: Above ground oil storage tanks
- PPG 3: Use and design of oil separators in surface water drainage systems
- GPP 4: Treatment and disposal of wastewater where there is no connection to the public foul sewer
- GPP 5: Works and maintenance in or near water
- PPG 6: Working at construction and demolition sites
- PPG 7: Safe storage - The safe operation of refuelling facilities
- GPP 8: Safe storage and disposal of used oils
- GPP 8: Safe storage and disposal of used oils
- GPP 8: Safe storage and disposal of used oils
- GPP 19: Vehicles: Service and Repair
- GPP 21: Pollution incident response planning
- GPP 22: Dealing with spills
- GPP 26 Safe storage - drums and intermediate bulk containers
- PPG 27: Installation, decommissioning and removal of underground storage tanks
- CIRIA Environmental Good Practice on Site.

### 5.5.1 Construction Phase

**Surface Water Quality**

The potential for the construction phase of the Proposed Development to result in the discharge of polluted surface water to the River Boyne has been identified as a potential impact pathway that could result in adverse effects to the River Boyne and Estuaries European Sites.

In order to minimise the generation of polluted waters in the first instance and avoid the discharge of polluted surface water to the River Boyne the following measures will be implemented:

- The main contractor will appoint a suitably qualified person to oversee the implementation of measures for the prevention of pollution to the receiving surface water environment.
- A surface water catch-trenches will be provided along the northern, western and eastern boundary of the construction footprint prior to stripping topsoil. The surface water catch-trenches will have a settlement pond silt trap at the end of each trench with an overflow. The surface water catch-trenches will be discharged via a buffered outfall overland to the north of the site. Straw bales will be placed within the catch-trenches at strategic locations and at the outfall of the settlement ponds to the overflow. These measures will be implemented and maintained during the construction phase to

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prevent surface water runoff from discharging directly into the local water course. An indicative layout for the proposed surface water catch-trenches is set out in Appendix A of the CEMP for the Proposed Development, provided under separate cover with the planning application documentation.

- A clean water diversion drain will be provided for in advance of the stripping of topsoil. The clean water diversion drain will be provided to the south and up-gradient of the construction footprint. This will divert surface water runoff overland from areas to the south and upgradient of the construction footprint away from this footprint, thereby minimising the volume of runoff occurring within this footprint.
- A silt fence will be installed in accordance with CIRIA guidelines along the western, northern and eastern boundary of the construction footprint. The provision of the silt fence, particularly along the northern and eastern boundary of the construction footprint will eliminate the potential for the untreated release of silt-laden surface water from the Proposed Development site north towards the River Boyne or east towards the culverted section of the Sheephouse Stream.
- Settlement ponds/silt traps as outlined above will be provided to prevent silt runoff into the existing ditches/watercourses during the drainage works.
- Regular testing of surface water discharges will be undertaken at the outfall from the subject lands. The location will be agreed between the project ecologist and the site foreman at the commencement of works. Trigger levels for halting works and re-examining protection measures will be: pH >9.0 or pH <6.0; and/or suspended solids >25 mg/l. These trigger levels are based on those outlined within 'Guidelines on Protection of Fisheries During Works in and Adjacent to Waters (IFI, 2016)'.
- In the unlikely and unexpected event that silt control measures are noted to be failing or not working adequately, works will cease in the relevant area. The project ecologist will review and agree alternative pollution control measures, such as deepening or redirecting trenches as appropriate, before works may recommence.
- All fuels and chemicals will be bunded, and where applicable, stored within double skinned tanks / containers with the capacity to hold 110% of the volume of chemicals and fuels contents. Bunds will be located on flat ground a minimum distance of 50m from any watercourse or other water conducting features, including the cut off trenches. This will prevent the discharge of such substances to ground and eliminate the potential for groundwater base flow contamination with such substances.
- Any re-fuelling and maintenance of equipment will be done at designated bunded areas with full attendance of plant operative(s) within contained areas at least 50m from any surface water drain to be provided on site as part of the construction phase drainage management. Re-fuelling in such areas will prevent the discharge of such substances to ground and eliminate the potential for groundwater base flow contamination with such substances.
- All existing services will be located using service records, GPR surveys and slit trenches to ensure that their position accurately identified before excavation works commence.
- Spill kits will contain 10 hr terrestrial oil booms (80mm diameter x 1000mm) and a plastic sheet, upon which contaminated soil can be placed to prevent leaching to ground water.
- A designated wash down area within the Contractor's compound will be used for cleaning of any equipment or plant, with the safe disposal of any contaminated water

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- Temporary traffic management will be implemented as appropriate during the construction of the outfalls on Rathmullan/River Road.

**Noise and Vibration Emissions**

Whilst this NIS found no functional noise impact pathway connecting the Proposed Development site to European Sites, a series of best practices will be implemented to control noise emissions during the construction phase. The scheme contractor will be obliged to give due regard to BS5228, which offers detailed guidance on the control of noise from construction activities. In particular, it is proposed that various practices be adopted during construction, including:

- Limiting the hours during which site activities likely to create high levels of noise are permitted.
- Establishing channels of communication between the contractor/developer, local authority and residents.
- Appointing a site representative responsible for matters relating to noise.
- Ensuring all site access roads are kept as even as possible so as to mitigate the potential for vibration from lorries.
- Monitoring typical levels of noise during critical periods at sensitive locations.

Furthermore, it is necessary for a variety of practicable noise control measures to be employed as follows:

- Selection of plant with low inherent potential for generation of noise.
- Siting of noisy plant as far away from sensitive properties as permitted by site constraints.

**Dust and Airborne Pollutants**

The construction phase has been identified as having the potential to generate soiling and dust within a potential 100m buffer zone surrounding the construction footprint. This includes the area of oak-ash-hazel woodland to the north of the construction footprint, which is located within the boundary of the River Boyne and River Blackwater SAC. In order to prevent soiling and adverse effects to vegetation the main contractor will be required to demonstrate that both nuisance dust and fine particle emissions from the site are adequately controlled and are within acceptable limits through use of the prevention and mitigation measures set out herein.

Dust and fine particle generation from construction and demolition activities on the site can be substantially reduced through carefully selected mitigation techniques and effective management. Once particles are airborne it is very difficult to prevent them from dispersing into the surrounding area. The most effective technique is to control dust at source and prevent it from becoming air borne, since suppression is virtually impossible once it has become air borne.

The following are techniques and methods which are widely used currently throughout the construction industry and which shall be used in the construction of the Proposed Development, where appropriate:

- The roads around the site are all surfaced and no dust is anticipated arising from unsealed surfaces.

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- Vehicles travelling on any unsurfaced site roads shall have their speed restricted to 20 kph.
- A regime of 'wet' road sweeping will be set up to ensure the roads around the immediate site areas clean and free from dirt / dust arising from the site, as is reasonably practicable. This cleaning will be carried out by approved mechanical sweepers.
- Footpaths immediately around the site will be cleaned by hand regularly, with damping as necessary.
- High level walkways and surfaces such as scaffolding shall be cleaned regularly using safe 'wet' methods, as opposed to dry methods.
- Vehicle waiting areas or hard standings will be regularly inspected and kept clean by brushing or vacuum sweeping and will be regularly sprayed to keep moist, if necessary.
- Vehicle and wheel washing facilities will be provided at site exit(s) where practicable. If necessary, vehicles shall be washed down before exiting the site.
- Netting will be provided to enclose scaffolding in order to mitigate escape of air borne dust from the existing and new buildings.
- Vehicles and equipment shall not emit black smoke from exhaust system, except during ignition at start up.
- Servicing of vehicles and plant shall be carried out regularly, rather than just following breakdowns.
- Internal combustion plant shall not be left running unnecessarily.
- Exhaust direction and heights shall be such as not to disturb dust on the ground and to ensure adequate local dispersal of emissions.
- Where possible fixed plant such as generators shall be located away from residential areas.
- The number of handling operations for materials will be kept to a minimum in order to ensure that dusty material is not moved or handled unnecessarily.
- The transport of dusty materials and aggregates shall be carried out using covered / sheeted lorries.
- Material handling areas shall be clean, tidy and free from dust.
- Vehicle loading shall be dampened down and drop heights for material to be kept to a minimum.
- Drop heights for chutes / skips shall be kept to a minimum.
- Dust dispersal over the site boundary shall be minimised using static sprinklers or other watering methods as necessary.
- Stockpiles of materials shall be kept to a minimum and if necessary, they shall be kept away from sensitive receptors such as residential areas etc.
- Stockpiles were necessary, shall be sheeted or watered down.
- Methods and equipment shall be in place for immediate clean-up of spillages of dusty material.
- No burning of materials will be permitted on site.
- Earthworks excavations shall be kept damp where necessary and where reasonably practicable.
- Cutting on site shall be avoided where possible by using pre-fabrication methods
- Equipment and techniques for cutting / grinding / drilling / sawing / sanding etc, which minimise dust emissions and which have the best available dust suppression measures, shall be employed.

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- Where scabbling is to be employed, tools shall be fitted with dust bags, residual dust shall be vacuumed up rather than swept away, and areas to be scabbled shall be screened off.
- Wet processes shall be used to clean building facades if possible. If dry grit blasting is unavoidable then ensure areas of work are sealed off and dust extraction systems used.
- Where possible pre-mixed plasters and masonry compounds shall be used to minimise dust arising from onsite mixing.
- Prior to commencement, the main contractor shall identify the construction operations which are likely to generate dust and to draw up action plans to minimise emissions, utilising the methods highlighted above. Furthermore, the main contractor shall prepare environmental risk assessments for all dust generating processes, which are envisaged.
- The main contractor shall allocate suitably qualified personnel to be responsible for ensuring the generation of dust is minimised and effectively controlled.
- The name and contact details of a person to contact regarding air quality and dust issues shall be displayed on the site boundary, this notice board shall also include head/regional office contact details.

The contractor will be obliged to implement the mitigation measures outlined above in respect of dust/dirt control.

**Considerations for Key Ecological Receptors**

All hedgerows and immature woodland marked for retention will be fenced off at the outset of works and for the duration of construction to avoid damage to the trunk, branches or root systems of the trees. Temporary fencing will be erected at a sufficient distance from the tree so as to enclose the Root Protection Area (RPA) of the tree (National Roads Authority, 2005-2011). In general, the RPA covers an area equivalent to a circle with a radius 12 times the stem diameter (measured at 1.5m above ground level for single stemmed trees). Where fencing is not feasible due to insufficient space, protection for the tree/hedgerow will be afforded by wrapping hessian sacking (or suitable equivalent) around the trunk of the tree and strapping stout buffer timbers around it. It will still be necessary to ensure that the area within the RPA is not used for vehicle parking or the storage of materials (including oils and chemicals). Soil will not be placed within the Root Protection Area of trees or within 5m of hedgerows; The woodland will not be lit during the construction or operational phases of the development; and the construction compound will be located a minimum of 50m from watercourses.

In order to minimise the potential for disturbance to the woodland habitat to the north of the Proposed Development site the landscape masterplan has been designed to include the provision new native woodland habitat to the south of the existing area of woodland. This woodland will be contiguous with the existing woodland to the north of the development. A 1.6m high temporary stock proof fence will be provided along the southern boundary of the new area woodland until it has developed. The 10m strip fringing this woodland will be treated as a dense woodland boundary with an abundance of *Prunus spinosa* and *Crataegus mongyna*. This will provide protection for the woodland and minimise the potential to for disturbance.

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### 5.5.2 Operational Phase

Measures have been incorporated into the design of the Proposed Development to ensure that surface water discharging from the Proposed Development site is clean and does not have the potential to result in pollution to the estuary at the surface water outfall location. These design measures included the provision of onsite attenuation so that all surface water draining from the Proposed Development site is restricted to green field runoff rates. This will be achieved by providing attenuation storage for the Proposed Development, as described in Section 3 above.

- Hydrobrakes will be installed at each of the attenuation tanks provided for as part of the development.
- A full hydrocarbon and silt interceptor will be provided at the outlet of the attenuation pond so that all water being directed to the rising main first passes through the interceptor prior to its release from the site.
- A range of SuDS measures will be implemented that will further treat and manage surface water generated on site during the operation phase.

The provision of these design features will ensure that surface water emitted from the Proposed Development site during the operation phase is adequately treated and will eliminate any risk of polluted surface water being discharged from the Proposed Development site during operation.

### 5.5.3 "Worst Case" Scenario

**Loss of Woodland Habitat**

The partial or permanent loss of the oak-ash-hazel woodland, albeit small in area (<1 ha), could result in a disproportionate ecological impact on a regional scale. The affected woodland may support important understorey and ground flora communities typical of native woodland types, whose loss could contribute to the simplification and fragmentation of the woodland ecosystem. The degradation of ecological connectivity and microclimatic stability within the retained woodland area may follow, potentially diminishing its long-term ecological integrity. Should the proposed compensation (within the masterplan) not be delivered, or fail to establish, the loss would constitute a net decline in native woodland cover in the local area

**Loss of Hedgerows for Breeding Birds**

Although widespread removal of hedgerows is not envisioned for the Proposed Development site, it is inevitable that some hedgerows will be removed and / or disturbed during the construction phase of works. Disturbance to hedgerows of even moderate ecological value could result in the significant loss of nesting and foraging habitat for a broad assemblage of common breeding birds. Should hedgerow removal occur during the breeding season despite intended safeguards, resultant nest destruction and the loss of eggs or chicks may be inevitable. However, it is envisioned that the loss of species rich hedgerow habitat that offers optimal breeding habitat will be minimal across the development site, whereby the likely impact to breeding bird habitat will be low.

**Loss of Local & Regional Biodiversity through Loss of Rare Bird Species**

Yellowhammer (*Emberiza citrinella*) was identified on a single sample occasion in June 2022 on the western boundary of the Proposed Development site, and has subsequently never

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been observed nor recorded between June 2022 and August 2025. A worst case scenario would involve indirect disturbance or degradation of nearby breeding habitat through increased noise, human activity, or the loss of surrounding hedgerows or feeding areas.. Whilst it is noted that Yellowhammer is a Red-Listed species of high conservation concern (BoCCI) and protected under Annex I of the EU Birds Directive, recent surveys within and near the Proposed Development site would suggest that the 2022 vocal recording of Yellowhammer was incidental. It should be further noted that Yellowhammer have a core territory range of c. 2 km, whilst there is further supporting habitat (agricultural lands and grasslands) on lands surrounding the Proposed Development site. .Nevertheless, as a precautionary approach, effective mitigation and monitoring has been proposed to mitigate potential loss of local and regional avian biodiversity. .

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**Contaminated Surface Water Run-off**

In a worst-case scenario the ongoing discharge of waters with high concentrations of contaminating substances could over time lead to the deposition of such contaminants in lotic and wetland intertidal habitats. Revitt et al. (2014) demonstrated the potential of car parking areas to result in a build-up of diffuse pollution loads on their surfaces with subsequent mobilization and direct discharge to receiving waters. In the absence of appropriate design safeguards (such as the inclusion of attenuation and hydrocarbon interceptors) the discharge of such contaminated surface water from the Proposed Development site during the operation phase could represent a source of ongoing contamination to surface drainage waters being discharged to the River Boyne. Accidental spillages of contaminating materials during the operation phase could also represent sources of acute pollution to these watercourses.

The exposure of lotic and estuarine fauna, including fish, birds and mammals, to such contaminants can result in disturbance and stress effects. Upon detection of such contaminants mobile species such as fish, Kingfishers and wetland birds or otters may simply move away from the affected area, with the potential to result in a decline in the distribution of these species within the River Boyne and River Blackwater SPA and SAC, and Boyne River Estuary SPA. For sessile benthic fauna, upon which the freshwater qualifying fish species of the SAC and many of the wetland bird species of the SPA rely, there will be no potential for escape and their exposure to contaminants may result in biological changes designed to aid survival. In some cases these benthic species may acclimatise to contaminated conditions, while in others the contaminants may lead to mortality and changes in the population and community structure of intertidal wetland habitats. Such an effect would have the potential to undermine the conservation status of lotic and wetland habitats occurring downstream of the Proposed Development, with consequent effects on qualifying species such as Atlantic salmon, lamprey species, kingfishers, otters and wetland bird species further downstream at the Boyne Estuary SPA.

## 5.6 Residual Effects

No residual effects are expected from the construction or operational phase of works from this development.

## 5.7 Monitoring

This section outlines the ecological monitoring measures proposed for the **construction** and operational phases of the development, in accordance with legislative requirements and best practice guidance. Monitoring focuses on legally protected fauna and their habitats,

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particularly badger, otter, and protected bird species identified within or adjacent to the Proposed Development site.

### 5.7.1 Construction Phase

The purpose of construction-phase monitoring is to,

- Ensure compliance with mitigation measures and legal protections;
- Prevent disturbance or harm to protected species;
- Confirm implementation of avoidance zones, buffers, and habitat protection measures.

**Badger (*Meles meles*)**

- Sett Activity Checks
  - Conduct pre-commencement sett status surveys within 150 m of the site boundary
  - Potentially use trail cameras as appropriate.
  - Buffer Zones - Maintain 30 m no-disturbance buffers around active setts.
- Derogation Licensing: Where disturbance is unavoidable, apply for an NPWS derogation licence. Works to be supervised by a licensed ecologist.
- Monitoring frequency should include,
  - one pre-commencement survey
  - monthly walkovers near known sett locations during construction.

**Otter *(Lutra lutra)***

- Pre-commencement Survey to confirm locations / evidence of
  - holts
  - couches
  - sprainting sites
  - trails within 150 m of site watercourses.
- Exclusion Zones
  - Apply a 150 m buffer around active holts
  - No construction works within this buffer without licence and supervision.
- Pollution control monitoring on a weekly basis via visual inspection of sediment control measures and drainage mitigation near aquatic habitats.
- No night-time works.

**Protected Birds**

- No clearance vegetation or clearance of nesting habitats between 1st March and 31st August unless confirmed inactive by an ecologist.
- Prior to any clearance works, nesting bird checks will be carried out by a qualified ecologist.
- Acoustic screens or buffers to be implemented near active nests of sensitive species (e.g., Yellowhammer, Meadow Pipit, Kingfisher).
- Ecological Clerk of Works (EcOW) to supervise all clearance and earthworks in areas supporting bird nesting or foraging habitat.

**Habitats**

- Weekly site walkovers to inspect condition of retained hedgerows, treelines, and aquatic buffers.

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- Biweekly water quality spot checks (turbidity, sedimentation) nearby drainage lines and / or surface water run-off channels during active construction works.

**Construction Phase Reporting**

- Monthly ecological monitoring reports submitted to the Planning Authority.
- Immediate reporting of any breach of buffer zones or wildlife incidents to NPWS and the ECoW.

### 5.7.2 Operational Phase

Operational-phase monitoring aims to,

- Assess the long-term use of retained and enhanced habitats by target species
- Evaluate the success of mitigation and habitat enhancement measures
- Guide adaptive management interventions as necessary.

**Badger**

- Determine changes in sett use and foraging activity within the development area.
- Monitoring Locations: Focus on areas adjacent to roads, greenways, and retained habitat corridors.
- Reporting Frequency: Annual surveys for 5 years post-construction.

**Otter**

- Biannual Survey: Spring and autumn surveys of otter holts, sprainting sites, and movement corridors in adjacent watercourses.
- Habitat Use Monitoring: Assess use of riparian corridors, underpasses or bridges (if installed), and potential new holts.
- Reporting Frequency: Every 6 months for 5 years post-construction.

**Protected Birds**

- Breeding Bird Survey - Conducted annually in spring (March–June) for at least 3 years post-construction.
- Wintering Bird Survey - Carried out in winter (October–February) to detect presence and abundance of wintering species.
- Nest Box Monitoring - Success and occupancy rates of installed nest boxes (e.g., for barn owl or passerines) recorded annually.

**Habitats**

- Evaluate retained and enhanced habitats, including hedgerows, oak-ash-hazel woodland, watercourses, riparian zones, and grasslands.
- Targeted inspections for non-native invasive species encroachment and management needs
- Track the success of native planting schemes, woodland and hedgerow functioning, and grassland diversity.

**Operational Phase Reporting**

- Annual Biodiversity Monitoring Reports summarising ecological trends, species presence, habitat condition, and recommendations for further management.

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- Submitted to the Planning Authority and made available to NPWS where relevant.

## 5.8 Interactions

The potential for interactions between biodiversity and other environmental factors has been considered in accordance with the EPA Guidelines on the Information to be Contained in EIAR (2022). While the findings of this assessment conclude that no significant adverse effects to biodiversity are likely to occur, it is recognised that ecological receptors can be indirectly affected by environmental changes assessed under other chapters of this EIAR. Key receptors requiring consideration include Otter, protected bird species, the River Boyne, oak-ash-hazel woodland habitat, and hedgerows of local biodiversity value.

The following potential interactions were identified and assessed,

**Hydrology and Water Quality**

The adjacent river forms a major hydrological feature that supports otter and aquatic biodiversity. While construction activities carry a theoretical risk of surface water contamination or sedimentation, appropriate water management and mitigation measures (e.g. silt fencing, bunding, sediment traps) have been incorporated to prevent discharge to the watercourse. As such, no significant interaction with aquatic ecology or downstream designated sites is anticipated.

**Noise and Vibration Emissions**

Elevated noise levels during construction could potentially disturb Otter holts and couches or displace sensitive bird species. However, field surveys confirmed no active Otter holts within the proximity (> 150m) from the Proposed Development site. Additionally, no breeding birds nor their supporting habitat were recorded in proximity to construction works. Additionally, noise emissions are expected to remain within acceptable thresholds, and no long-term disturbance effects are predicted.

**Air Quality and Dust Deposition**

Dust generation during groundworks may affect adjacent vegetation, particularly hedgerows and woodland understorey. However, given the scale and duration of the proposed works, combined with standard dust suppression measures, the potential for dust-related effects on flora or bird habitats is minimal.

**Lighting and Human Disturbance**

Artificial lighting associated with construction and operation has the potential to affect nocturnal species such as otter, bats and bird species. However, directional and low-spill lighting designs have been specified to minimise night-time illumination of ecologically sensitive areas, particularly along the riparian corridor.

In conclusion, while biodiversity has potential linkages with other environmental factors, the implementation of embedded design measures, standard mitigation practices, and best environmental management will ensure that no significant residual interactions are likely to occur. This integrated approach contributes to the protection of ecological receptors and supports compliance with relevant national and EU biodiversity legislation.

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## 5.9 Difficulties Encountered When Compiling

There were no difficulties encountered during the compilation of this biodiversity chapter, nor were difficulties encountered during the various field surveys.

## 5.10 Conclusions

This chapter presents an analysis of the potential for the Proposed Development to result in adverse impacts to five Natura 2000 Sites identified during the screening for Appropriate Assessment as occurring within the zone of influence of the Proposed Development.

Impacts to several Natura 2000 sites were ruled out, namely, River Boyne and River Blackwater SPA, Boyne Estuary SPA, and the North-West Irish Sea SPA, because targeted field surveys completed at the Proposed Development site revealed no evidence that the site is used as an *ex-situ* habitat by special conservation interest bird species and waterbirds of these SPAs.

Potential impacts to the features of interest of the four Natura sites designated within the River Boyne and Estuary were identified with regard to the potential for the Proposed Development to result in the emission of polluted waters, via hydrological pathways to the River Boyne. Other pathways that were identified during the screening as requiring examination as part of this NIS, such as air, noise and vibration and human disturbance pathways, were found not to have the potential to result in adverse effects to features of interest of the River Boyne and Estuaries European Sites.

An evaluation of the potential impact of discharges of waters via surface or groundwater pathways during the construction phase and operation phase which determined that, in the absence of appropriate mitigation measures, there is likelihood for contaminants to be released from the Proposed Development site to the River Boyne. Consequently, negative impacts to water quality would occur to ecological receptors within the River Boyne.

Appropriate mitigation measures have been recommended within this chapter that specifically aim to avoid the discharge of contaminated surface drainage waters from the Proposed Development site during the construction and operation phase. These standard mitigation measures, which are of common application, have been referenced to the best practice measures upon which they are based.

It has been concluded that, provided all mitigation measures that aim to avoid the discharge of contaminated surface drainage waters are implemented, the potential for negative impacts to water quality and associated adverse effects to qualifying interests and their conservation objectives along the River Boyne and downstream at the Boyne Estuary, will be eliminated.

Additionally, best practice mitigation measures have been outlined to avoid disturbance from other pathways such as air and human disturbance to non-qualifying woodland habitat occurring to the north of the Proposed Development site.

A thorough investigation into the presence of bat roost sites and utilisation of the proposed development site by bats was completed between 2018 and 2024. Several derelict farm buildings are located along the eastern boundary of the development site, which offer potential bat roosting habitat. Although bat roost surveys revealed that several of these derelict buildings served as bat roosting habitat in 2018, subsequent specialist bat surveys have revealed no supporting evidence to suggest that any bat species utilise any structures, within

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the boundaries nor on lands immediately surrounding the proposed development, as roosting habitat.

Moreover, active and static detectors surveys (2024) suggest that the proposed development site is utilised by low numbers of bat species for foraging and / or traversing. As such, bat specialist surveys have determined that the proposed development site offers low value supporting habitat for bat species. Consequently, it is determined that, in light of the lack of bat roosting and low utilisation of the site, the proposed development will afford significant impacts to bat species nor their conservation objectives within the local landscape.

On the basis of the content of this report, it is the considered view of the authors of this Biodiversity chapter that the competent authority is enabled to conduct a review of provided information to consider whether the proposed development, either alone or in combination with other plans or projects, in view of best scientific knowledge and in view of the sites conservation objectives, will adversely affect the integrity of any Natura 2000 site.

It is the considered view of the authors of this Biodiversity chapter that it can be lawfully concluded by Meath County Council that the Proposed Development will not, either alone or in-combination with other plans or projects, result in adverse effects to the integrity and conservation status of Natura 2000 Sites in view of their Conservation Objectives and, on the basis of best scientific evidence, there is no reasonable scientific doubt as to that conclusion.

## 5.11 References

Bat Conservation Trust (2022) Interim Guidance Note: Use of night vision aids for bat emergence surveys and further comment on dawn surveys.

Birds of Ireland (2025). Kingfisher (*Alcedo atthis*). Accessible at https://www.birds.ie/birds/kingfisher.

Chartered Institute of Ecology and Environmental Management (CIEEM - 2018) Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal, and Marine. Chartered Institute of Ecology and Environmental Management

Chartered Institute of Ecology and Environmental Management (CIEEM - 2021) Mitigation Guidelines: A guide to impact assessment, mitigation and compensation for developments affecting bats. Beta version.

Department of Housing, Planning and Local Government (DHPLG - 2018). Urban Development and Building Heights Guidelines for Planning Authorities

Ferrando, A., Gonzalez, E., Franco, M., Commendatore, M., Nievas, M., Militon, C., Stora, G., Gilbert, F., Esteves, J.L. and Cuny, P., 2015. Oil spill effects on macrofaunal communities and bioturbation of pristine marine sediments (Caleta Valdés, Patagonia, Argentina): experimental evidence of low resistance capacities of benthic systems without history of pollution. *Environmental Science and Pollution Research*, *22*, pp.15294-15306.

Fossitt J. A. (2000). A Guide to Habitats in Ireland. Heritage Council.

Heritage Council (2002). Draft Habitat Survey Guidelines. Hertiage Council.

CIEEM (2006). Guidelines for Ecological Impacts Assessment. IEEM.

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Marnell, F., Kelleher, C. & Mullen, E. (2022) Bat mitigation guidelines for Ireland v2. Irish Wildlife Manuals, No. 134. National Parks and Wildlife Service, Department of Housing, Local Government and Heritage, IrelandGoodship, N.M. and Furness, R.W. (MacArthur Green). Disturbance Distances Review: An updated literature review of disturbance distances of selected bird species. NatureScot Research Report 1283.

Neal E. & Cheeseman C. (1996). Badgers. Poyser Natural History. London.

NPWS (2009) Threat Response Plan: Otter (2009-2011). National Parks & Wildlife Service, Department of the Environment, Heritage & Local Government, Dublin.

NPWS (2021). Strict Protection of Animal Species. Guidance for Public Authorities on the Application of Articles 12 and 16 of the EU Habitats Directive Development/Works Undertaken by or on Behalf of a Public Authority. Eds. Enda Mullen, Ferdia Marnell, and Brian Nelson.

NRA (2006a). Guidelines for assessment of ecological impacts of National Road Schemes. National Road Authority

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# 6 LAND AND SOIL

## 6.1 Introduction

This chapter of the Environmental Impact Assessment Report (EIAR) provides a description of the land, soils and geology within and immediately surrounding the site of the Proposed Development and an assessment of the potential effects of the Proposed Development on the receiving land, soils and geology and sets out any required mitigation measures where appropriate.

The principal objectives of this chapter are to identify:

- Land, soils, and geological characteristics of the receiving environment at the site.
- Potential effects that the Proposed Development may have on land, soils and geology including “worst case” scenario assessment.
- Potential constraints that the environmental attributes may place on the Proposed Development.
- Required mitigation measures which may be necessary to minimise any adverse effects related to the Proposed Development.
- Evaluate the significance of any residual effects.

This chapter of the EIAR should be read in conjunction with Chapter 4 Population and Human Health, Chapter 5 Biodiversity, Chapter 7 Hydrology and Hydrogeology, Chapter 8 Air Quality, Chapter 11 Landscape and Visual Effect, Chapter 13 Material Assets: Traffic and Transport and Chapter 14 Material Assets: Waste and Utilities of the EIAR and other information provided by the Applicant pertaining to the design proposals for the Proposed Development.

### 6.1.1 Quality Assurance and Competency of Experts

This chapter was prepared by Nuria Manzanas BSc, MSc, PGeo, a Principal Consultant of DNV with over 11 years’ experience in contaminated land and hydrogeological assessments.

The chapter was reviewed by Gareth Carroll BA BEng MIEnvSc CEnv, a Principal Consultant of DNV. Gareth, a Chartered Environmentalist with the Institute of Environmental Sciences (CEnv) and over 12 years’ experience in environmental assessment of brownfield and greenfield sites for a range of project types and geological and hydrogeological site settings and is professionally competent and accredited to undertake environmental effect assessments.

This chapter has been approved by Catherine Keogan, Technical Director and EIA Lead at DNV. Catherine is an environmental consultant with 37 years’ experience in consultancy, specialising in EIAs for large-scale residential, commercial developments, pharmaceutical, BESS and solar projects working closely with a range of developers, planning consultants and architects within the public and private sector. Ms. Keogan has a B.Sc. (Hons) in Analytical Science and a Post Graduate Diploma in Renewable Energy Technology Systems.

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## 6.2 Study Methodology

### 6.2.1 Relevant Legislation and Guidance

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

- Environmental Protection Agency, May 2022. Guidelines on the information to be contained in Environmental Effect Assessment Reports (EPA, 2022).
- Institute of Geologists of Ireland Guidelines, 2002. Geology in Environmental Effect Statements, A Guide (IGI, 2002).
- Institute of Geologists of Ireland Guidelines for the Preparation of Soils, Geology and Hydrogeology Chapters of Environmental Effect Statements (IGI, 2013).
- National Roads Authority, 2009. Guidelines on Procedures for the Assessment and Treatment of Geology, Hydrology and Hydrogeology for National Road Schemes (NRA, 2009.
- Meath County Council (MCC, 2025). Meath County Development Plan 2021-2027.

### 6.2.2 Consultation

Pre-application consultation was held with MCC, with a Section 247 pre-planning consultation meeting held on the 6th of November 2024 and a Section 32 LRD consultation meeting was held on the 5th of March 2025, to explain the project and present technical and environmental information. Summary details of this meeting are provided by Hughes Planning & Development Consultants in their enclosed Statement of Consistency and Planning Report.

### 6.2.3 Phased Approach

A phased approach was adopted for this EIAR in accordance with the Environmental Protection Agency (EPA) and Institute of Geologists of Ireland (IGI) guidelines as set out above and is described in the following sections.

**Element 1:** An assessment and effect determination stage was carried out by DNV to establish the project location, type and scale of the development, the baseline conditions, and the type of land, soils and geological environment, to establish the activities associated with the Proposed Development. This element of the assessment also included developing the Conceptual Site Model (CSM) for the site and receiving environment. A CSM represents the characteristics of the site and identifies the possible relationship and potential risk between contaminant sources (i.e., characteristics of the proposed development), pathways (i.e., transport route or means by which a receptor can be exposed to) and receptors (receiving environment). The term pollutant linkage is used to describe a particular combination of source-pathway-receptor (SPR). Each of these elements can exist independently, but they create a risk only where they are linked together so that a particular contaminant affects a particular receptor through a particular pathway (i.e., a pollutant linkage).

The study area, for the purposes of assessing the baseline conditions for the Land, Soils and Geology Chapter of the EIAR, extends beyond the site boundaries and includes potential receptors with which there may be a pathway to/from the Proposed Development and receptors that may be indirectly affected by the Proposed Development. The extent of the wider study area was based on the IGI, 2013 Guidelines which recommend a minimum distance of 2.0km from the site.

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The study area for the Land, Soils, and Geology Chapter of the EIAR is defined to ensure a comprehensive assessment of baseline conditions. This area extends beyond the immediate boundaries of the site of the Proposed Development to include a broader region. The site refers specifically to the land where the Proposed Development will take place. In contrast, the study area encompasses a wider region, extending at least 2.0 km from the site, as recommended by the Institute of Geologists of Ireland (IGI) 2013 Guidelines. This broader area is necessary to identify and evaluate all potential receptors that could be affected by the Proposed Development, either directly or indirectly. The distinction between the application site and the study area is crucial. The site of the Proposed Development is the focal point of the Proposed Development, while the study area includes additional regions that might experience secondary effects. For instance, potential receptors within the study area include surrounding land that might undergo changes in land use or quality, soil quality and composition that could be altered by construction activities, and underlying geological features that might be affected.

The justification for this wider study area lies in the need to capture all potential effects comprehensively. While the primary focus is on the application site, the broader study area ensures that any indirect or secondary effects on land, soil, and geology are also considered. This approach provides a detailed and accurate picture of how the Proposed Development might affect these aspects of the environment, helping stakeholders make informed decisions and ensuring that all potential environmental effects are thoroughly assessed.

The desk study, undertaken for the preparation of the soils and geology chapter of this EIAR, involved collecting all the relevant data for the Proposed Development site and surrounding area including published information and details pertaining to the Proposed Development provided by the applicant and design team.

A site walkover survey to establish the environmental site setting and baseline conditions at the Proposed Development site relevant to the land, soil and geology environment was undertaken by DNV on the 17th of June 2025.

The Element 1 stage of the assessment was completed by DNV and included the review of the following sources of information:

- Environmental Protection Agency (EPA) webmapping 2025 (EPA, 2025).
- Geological Survey of Ireland (GSI) Datasets Public Viewer and Groundwater webmapping, 2025 (GSI, 2025).
- Google Earth Mapping and Imagery, 2025 (Google Earth, 2025).
- Ordnance Survey Ireland (OSI) webmapping, 2025 (OSI, 2025).
- National Parks and Wildlife Services (NPWS) webmapping, 2025 (NPWS, 2025).
- Teagasc webmapping, 2025 (Teagasc, 2025).
- Information provided by the Applicant pertaining to the design proposals for the Proposed Development.
    - Waterman Moylan Consulting Engineers, 2018 (WM, 2018). Report on a Site Investigation for a Housing Development at West Drogheda, County Meath for Clard Developments Ltd. Report No. 21345.
    - Waterman Moylan Consulting Engineers, 2025 (WM, 2025a). Engineering Assessment Report. Proposed Residential Development at Rathmullan, Drogheda, County Meath.

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- Waterman Moylan Consulting Engineers, 2025 (WM, 2025b). Construction Environmental Management Plan Proposed Residential Development at Rathmullan, Drogheda, Co. Meath.
- Waterman Moylan Consulting Engineers, 2025 (WM, 2025c). Construction Waste Management Plan Proposed Residential Development at Rathmullan, Drogheda, Co. Meath.

**Element 2:** Involves direct and indirect site investigation and studies stage where necessary to refine the CSM developed as part of Element 1 and evaluate the potential effects associated with the Proposed Development.

Site investigations were undertaken at the site in 2018 (Waterman Moylan Consulting Engineers (WM)), Report on a Site Investigation for a Housing Development at West Drogheda, County Meath, and included the excavation of five (5 No.) trial pits, the installation of five (5 No.) boreholes, HD dynamic probes at five (5 No.) locations and BRE Digest 365 Percolation Tests at five (5 No.) locations. The results of the site investigation remains relevant to the geological evaluation of the site, because it provided direct subsurface data, such as trial pits, boreholes, dynamic probes, and percolation tests, that were used to identify and assess the existing ground conditions and geological environment at the site and refine the CSM. In addition, the findings of the site walkover, undertaken by DNV on the 17th June 2025, indicate that the condition of the site remains unchanged since the 2018 site investigation and therefore, the findings of the investigation (2018) remain valid. Furthermore, a Technical Note was prepared by Waterman Moylan (WM) on 28th August 2025, confirming that the site conditions observed during the 2018 Site Investigation remain unchanged. The note verifies that there have been no alterations to the site since the original investigation that would give rise to any change in ground conditions. It is acknowledged that the site investigation was conducted approximately seven years ago, and that the current planning application for a Large-Scale Residential Development is relying on its findings. However, given that the site has remained in agricultural use since 2018 and no changes have occurred that would affect the underlying ground conditions, the original report remains valid and can be relied upon.

The site investigation (2018) report, is included within the CEMP, submitted in Volume 3: Appendix 6-1.

**Element 3:** Evaluation of Mitigation Measures, Residual Effects and Final Effect Assessment were based on the outcome of the information gathered in Element 1 and Element 2 of the assessment. Mitigation measures to address all identified adverse effects that were identified in Element 1 and Element 2 of the assessment were considered in relation to the construction phase and operational phase of the Proposed Development. These mitigation measures were then considered in the effect assessment to identify any residual effects.

**Element 4:** Completion of the Land, Soil and Geology sections of the EIAR in this Chapter which includes all the associated figures and documents.

### 6.2.4 Description of Importance of the Receiving Environment

The Transport Infrastructure Ireland (TII) criteria for rating of the importance of geological features at the site as documented in the National Roads Authority Guidelines on Procedures for the Assessment and Treatment of Geology, Hydrology and Hydrogeology for National Road Schemes (NRA, 2009), are summarised in Table 6-1.

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*Table 6-1. Criteria for Rating Site Importance of Geological Features*

| Importance | Criteria | Typical Example |
|---|---|---|
| Very High | Attribute has a high quality, significance, or value on a regional or national scale.<br>Degree or extent of soil contamination is significant on a national or regional scale.<br>Volume of peat and/or soft organic soil underlying route is significant on a national or regional scale. | Geological feature rare on a regional or national scale (NHA).<br>Large existing quarry or pit.<br>Proven economically extractable mineral resource. |
| High | Attribute has a high quality, significance, or value on a local scale.<br>Degree or extent of soil contamination is significant on a local scale.<br>Volume of peat and/or soft organic soil underlying route is significant on a local scale. | Contaminated soil on-site with previous heavy industrial usage.<br>Large recent landfill site for mixed wastes.<br>Geological feature of high value on a local scale (County Geological Site).<br>Well drained and/or high fertility soils.<br>Moderately sized existing quarry or pit.<br>Marginally economic extractable mineral resource. |
| Medium | Attribute has a medium quality, significance, or value on a local scale.<br>Degree or extent of soil contamination is moderate on a local scale.<br>Volume of peat and/or soft organic soil underlying route is moderate on a local scale. | Contaminated soil on-site with previous light industrial usage.<br>Small recent landfill site for mixed wastes.<br>Moderately drained and/or moderate fertility soils.<br>Small existing quarry or pit.<br>Sub-economic extractable mineral resource. |
| Low | Attribute has a low quality, significance, or value on a local scale.<br>Degree or extent of soil contamination is minor on a local scale.<br>Volume of peat and/or soft organic soil underlying route is small on a local scale. | Large historical and/or recent site for construction and demolition wastes.<br>Small historical and/or recent landfill site for construction and demolition wastes.<br>Poorly drained and/or low fertility soils.<br>Uneconomically extractable mineral resource. |

### 6.2.5 Description and Assessment of Potential Effect

Effects will vary in quality from negative, to neutral or positive. The impact of effects will vary in significance on the receiving environment. Effects will also vary in duration. The terminology and methodology used for assessing the 'effect' significance and the corresponding 'effect' throughout this chapter is described in Table 6-2 in accordance with EPA, 2022 guidelines on the information to be contained in EIARs.

*Table 6-2. Assessment of Potential Terminology and Methodology*

| Quality of Effects/Effects | Definition |
|---|---|
| Negative | A change which reduces the quality of the environment |
| Neutral | No effects or effects that are imperceptible, within the normal bounds of variation or within the margin of forecasting error. |
| Positive | A change that improves the quality of the environment |
| **Significance of Effects / Effects** | **Definition** |
| Imperceptible | An effect capable of measurement but without significant consequences. |

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| | |
|---|---|
| Not Significant | An effect which causes noticeable changes in the character of the environment but without significant consequences. |
| Slight Effects | An effect which causes noticeable changes in the character of the environment without affecting its sensitivities. |
| Moderate Effects | An effect that alters the character of the environment in a manner that is consistent with existing and emerging baseline trends. |
| Significant Effects | An effect which, by its character, magnitude, duration, or intensity alters a sensitive aspect of the environment. |
| Very Significant | An effect which, by its character, magnitude, duration, or intensity significantly alters a sensitive aspect of the environment. |
| Profound Effects | An effect which obliterates sensitive characteristics. |
| **Extend and Context of Effects** | **Definition** |
| Extend | Describe the size of the area, the number of sites and the proportion of a population affected by an effect. |
| Context | Describe weather the extent, duration or frequency will conform or contrast with established (baseline) conditions |
| **Probability of Effects** | **Definition** |
| Likely Effects | The effects that can reasonably be expected to occur because of the planned project if all mitigation measures are properly implemented. |
| Unlikely | The effects that can reasonably be expected not to occur because of the planned project if all mitigation measures are properly implemented. |
| **Duration of Effects / Effects** | **Definition** |
| Momentary | Effects lasting from seconds to minutes |
| Brief | Effects lasting less than a day |
| Temporary | Effects lasting one year or less |
| Short-term | Effects lasting one to seven years |
| Medium-term | Effects lasting seven to fifteen years |
| Long-term | Effects lasting fifteen to sixty years |
| Permanent | Effects lasting over sixty years |
| Reversible | Effects that can be undone, for example through remediation or restoration |
| **Types of Effects** | **Definition** |
| Indirect Effects | Effects on the environment, which are not a direct result of the project, often produced away from the project site or because of a complex pathway |
| Cumulative Effects | The addition of many minor or insignificant effects, including effects of other projects, to create larger, more significant effects. |
| “Do-nothing” Effects | The environment as it would be in the future should the subject project not be carried out |
| “Worst-case” Effects | he effects arising from a project in the case where mitigation measures substantially fail. |

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| | |
|---|---|
| Indeterminable Effects | When the full consequences of a change in the environment cannot be described. |
| Irreversible Effects | When the character, distinctiveness, diversity or reproductive capacity of an environment is permanently lost |
| Residual Effects | The degree of environmental change that will occur after the proposed mitigation measures have taken effect. |

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Figure 6-1 identifies how comparing the character of the predicted effect to the sensitivity of the receiving environment can determine the significance of the effect.

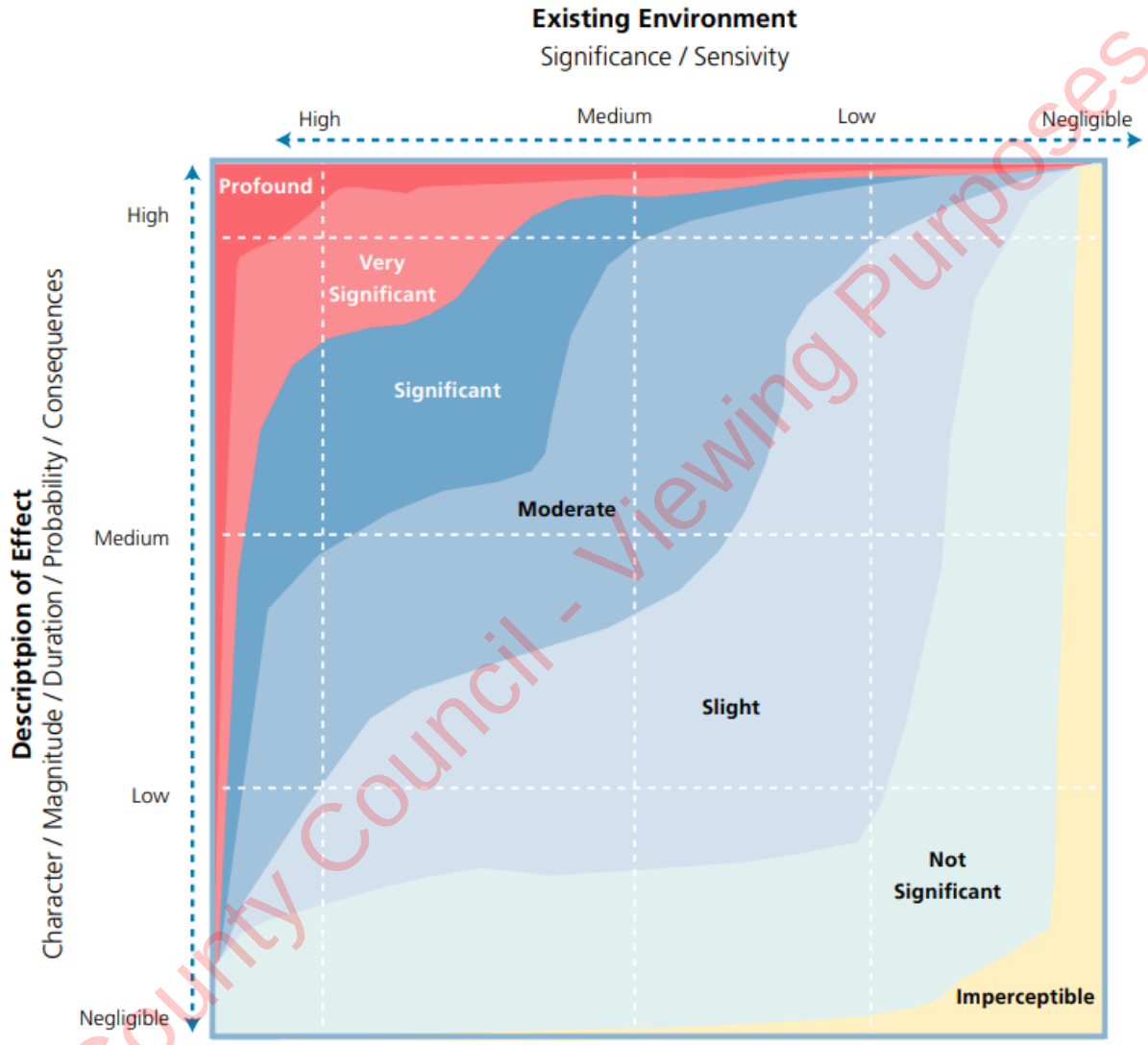



*Figure 6-1. Determining Significance*

## 6.3 The Existing and Receiving Environment (Baseline Situation)

### 6.3.1 Site Location and Surrounding Land Use

The site covers an area of 9.20ha. and is located adjacent to the Meath-Louth County border approximately 2.5km west of Drogheda Town Centre. The site is accessed by the Rathmullan road along the eastern boundary and is 40m south of the River Boyne and 200m east of the M1 motorway.

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A full description of the site location and surrounding land use is presented in Chapter 2 of this EIAR.

The site location is presented in Figure 6-2.

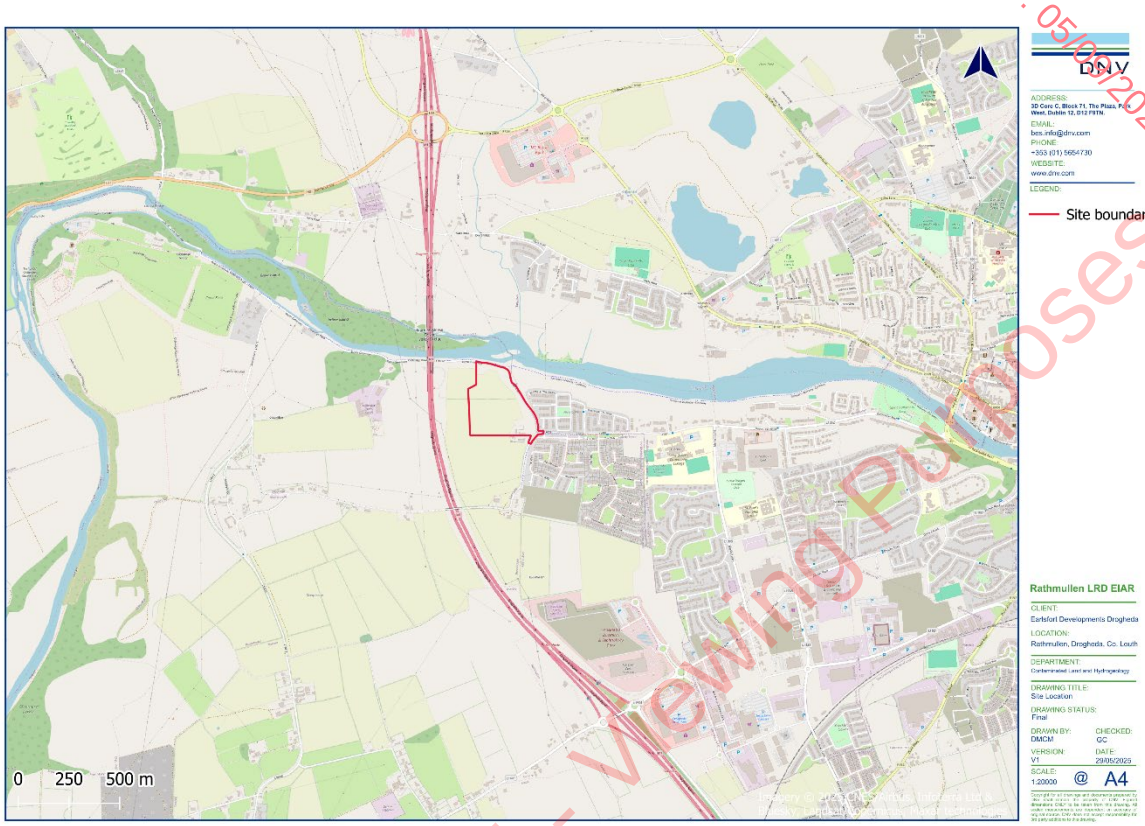



*Figure 6-2. Site Location*

### 6.3.2 Current and Historical Land Use

The site comprises largely undeveloped lands and includes former agricultural buildings in the southeastern portion of the site. The current site layout is presented in Figure 6-3.

The following land zoning and zoning objective, set out in the Meath County Development Plan 2021-2027 is applicable to the site:

- The lands across the majority of the site are zoned 'A2 New Residential– to provide for new residential communities with ancillary community facilities, neighbourhood facilities and employment uses as considered appropriate for the status of the centre in the Settlement Hierarchy'.
- While the lands along the western and southern boundaries of the site are currently zoned as White Lands

Therefore, the Proposed Development (i.e., Large-Scale Residential Development) is considered to meet the zoning objectives of the Meath County Development Plan 2021-2027.

Historical mapping and aerial photography available from the Ordnance Survey of Ireland website (OSI, 2025) and Google Earth (Google Earth, 2025) were reviewed and key observations on-site and off-site are summarised in Table 6-3.

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*Table 6-3. Historical Land Use*

| Date | Information Source | Site Description |
|---|---|---|
| 1837-1842 | OSI map 6inch | **On-site:** The Proposed Development site is shown as open fields separated by field boundaries and hedgerows. The northern boundary is comprised of woodland. There are two (2 No.) buildings/structures identified in the southeastern corner of the Proposed Development site.<br>**Off-site:** The surrounding lands are predominantly open fields divided by field boundaries with a number of one-off buildings/structures. |
| 1888-1913 | OSI map 25inch | **On-site:** No significant changes.<br>**Off-site:** No significant changes. |
| 1830-1930 | OSI Cassini map 6inch | **On-site**: No significant changes.<br>**Off-site:** No significant changes. |
| 1995 | OSI Aerial photography | **On-site:** There is a farmyard split by the site boundary in the southeastern corner of the Proposed Development site with four (4No.) agricultural buildings on site.<br>**Off-site:** The lands to the north, west and south have remained predominantly open fields divided by field boundaries with an increase in the number of one-off buildings/structures. To the east the town of Drogheda has significantly developed with buildings/structures of the town approximately 600m east of the site, however the lands directly adjoining the east of the Proposed Development site remain undeveloped. |
| 2001-2005 | OSI Aerial photography | **On-site**: No significant changes.<br>**Off-site:** The lands directly adjoining the east of the Proposed Development site are comprised of residential housing estates. The M1 motorway and the Mary McAleese Boyne Valley Bridge are approximately 200m west of the Proposed Development site. |
| 2006-2012 | OSI Aerial Photography | **On-site**: There are three (3 No.) agricultural buildings on site.<br>**Off-site:** No significant changes. |
| 2011-2013 | OSI Aerial Photography | **On-site**: No significant changes.<br>**Off-site:** Growth of Drogheda town. |
| 2013-2018 | OSI Aerial Photography | **On-site**: No significant changes.<br>**Off-site:** Growth of Drogheda town. |
| 2024 | Google Maps Photography | **On-site**: No significant changes.<br>**Off-site:** Growth of Drogheda town. |

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*Figure 6-3. Current Site Layout*

### 6.3.3 Topography

As documented in the Engineering Assessment Report (WM, 2025a) submitted with the planning application under separate cover, the site generally slopes from the southwest to the northeast towards the Boyne Estuary, with existing ground levels ranging from 30 meters above Ordnance Datum (mOD) to 6mOD within the site boundary.

### 6.3.4 Soils

The soils beneath the majority of the site are mapped by Teagasc (Teagasc, 2025) as deep well drained mineral (mainly acidic), Acid Brown Earths, Brown Podzolics (IFS Soil Code: AminDW) derived from mainly non-calcareous parent materials described as till derived chiefly from Lower Palaeozoic rocks (sandstone and shale till – TLPSsS).

A small area of the eastern portion of the site is mapped as shallow well drained mineral (mainly basic), Renzinas, Lithosols (IFS Soil Code: BminSW) derived from mainly calcareous parent materials described as bedrock at surface - calcareous – RckCa).

The soils beneath the site are presented in Figure 6-4.

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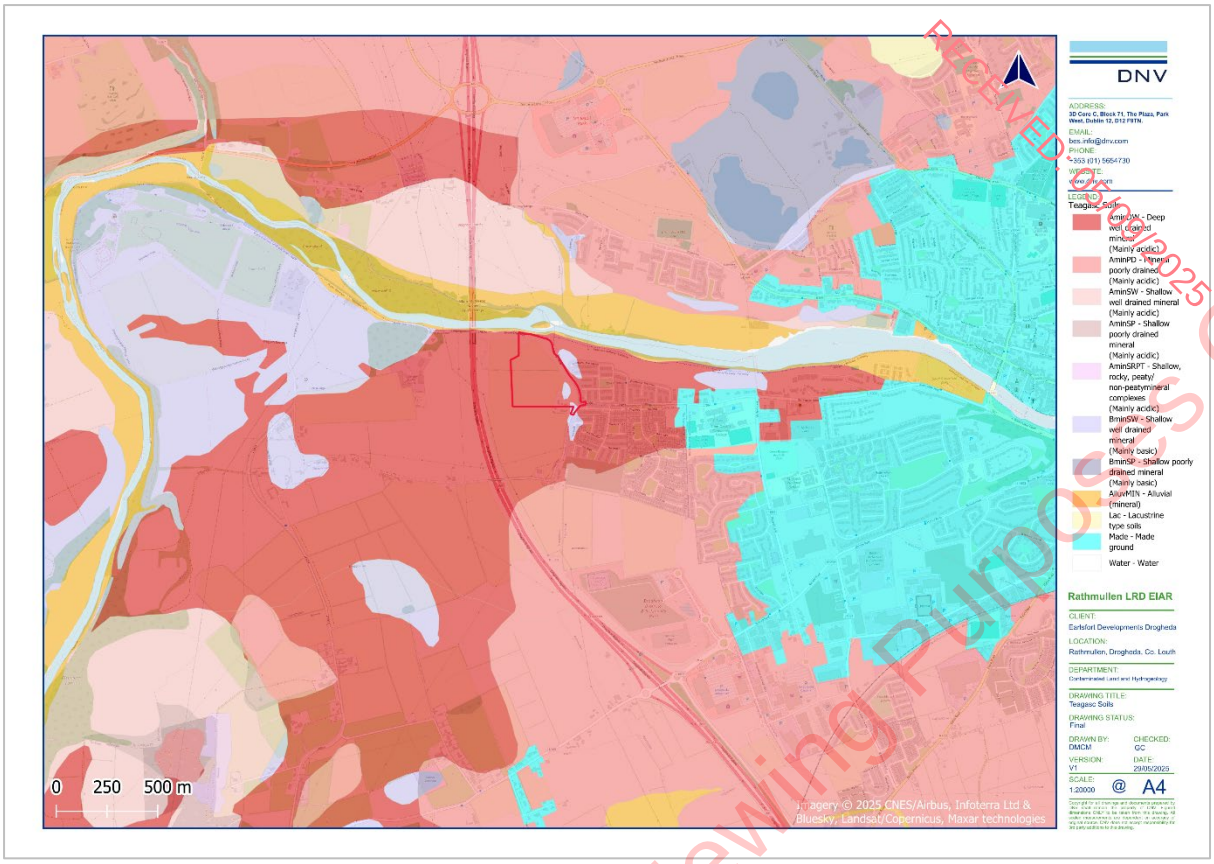



*Figure 6-4. Teagasc Soils*

### 6.3.5 Quaternary Sediments

The subsoil or quaternary sediments beneath the majority of the site are mapped by the GSI (GSI, 2025) as till derived from Lower Palaeozoic sandstones and shales (TLPSsS). A small area within the southeastern corner of the site is classified as a Kartsified bedrock outcrop or subcrop (KaRck).

The quaternary sediments beneath the site are presented in Figure 6-5.

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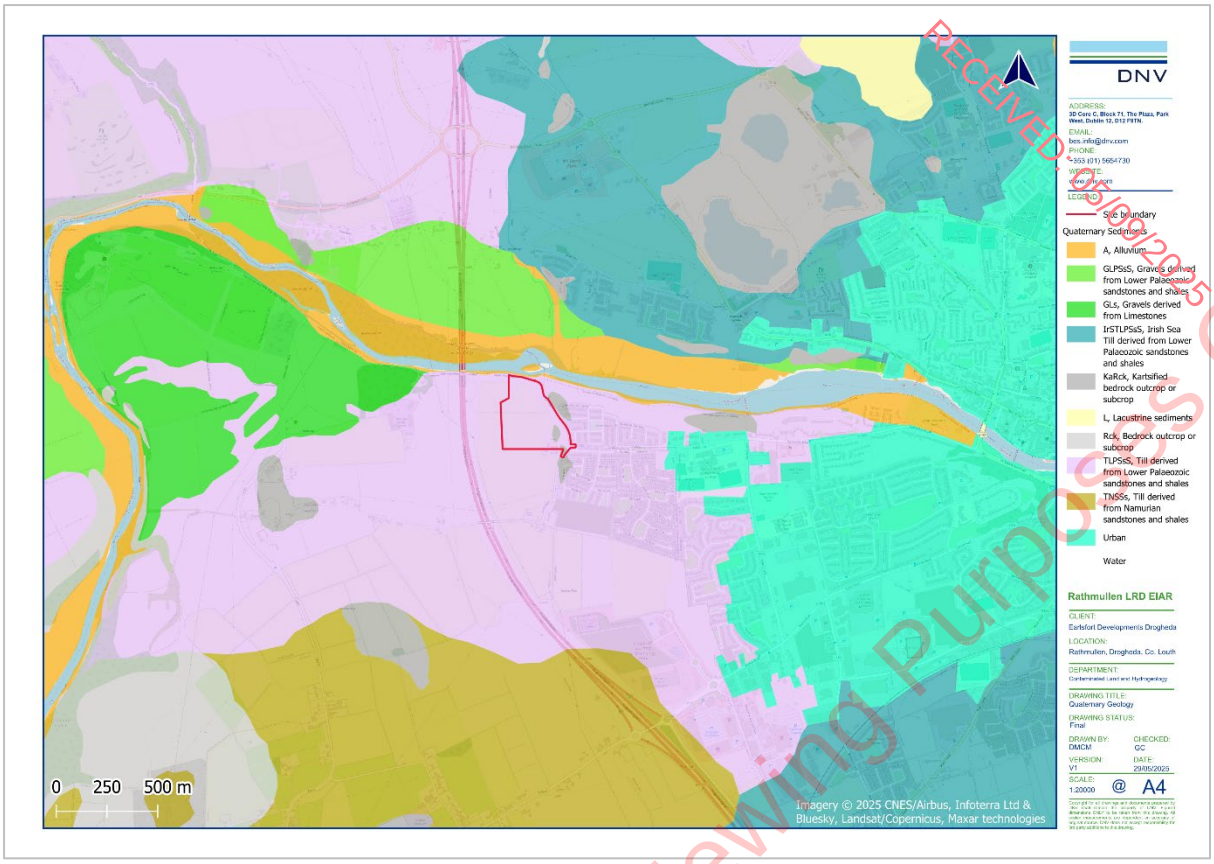



*Figure 6-5. Quaternary Soils*

### 6.3.6 Quaternary Geomorphology

The GSI (GSI, 2025) has identified four (4 No.) Glaciofluvial Terraces (ice-marginal landform) in the close vicinity of the site as follows:

- Boyne river system (IE_GSI_GL_deglacial_50K_387) located approximately 0.40km west of the site.
- Boyne river system (IE_GSI_GL_deglacial_50K_546) located approximately 0.24km north of the site.
- Boyne river system (IE_GSI_GL_deglacial_50K_8030) located approximately 0.30 km northeast of the site.
- Boyne river system (IE_GSI_GL_deglacial_50K_1449) located approximately 0.98 km east/northeast of the site.

Drumlins (sub-glacial form) have also been identified in the vicinity of the site at approximately 1.2km, 1.8km and 2.3km north of the site. The closed Ribbed Moraine (IE_GSI_GL_SGMor_50K_759) has been mapped approximately 0.65km north of the site.

### 6.3.7 Bedrock Geology

The bedrock beneath the site is mapped by the GSI (GSI, 2025) as the Platin Formation (Code: CDPLTN) described as coarse greywacke & shale.

There are two (2 No.) sets of bedrock outcropping located adjacent to the eastern and southern boundaries of the site (GSI, 2025).

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The bedrock geology beneath the site is presented in Figure 6-6.

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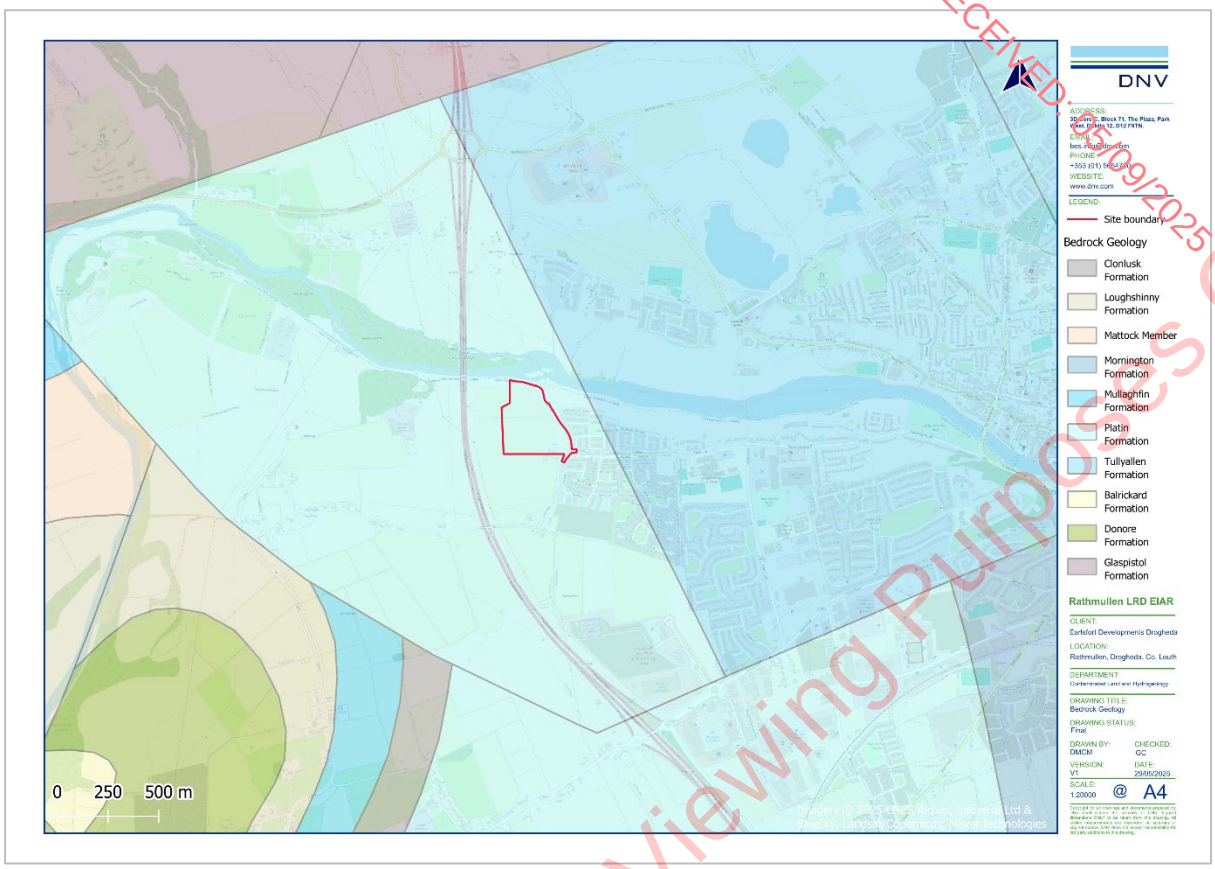



*Figure 6-6. Bedrock Geology*

### 6.3.8 Previous Site Investigation Results

The geology encountered during site investigations (WM, 2018; included in the EIAR Volume 3: Appendix 6.1) is summarised as follows:

- A 300mm layer of topsoil was identified overlying the natural ground.
- The topsoil was underlain by initially firm, brown, sandy, gravelly CLAY (i.e., glacial till or boulder clay) turned into stiff and very stiff brown, sandy, gravelly CLAY at approximately 1.20 metres below ground level (mbgl). Angular and sub-angular cobbles and boulders were noted at varying depths. This unit was encountered to the final extent of investigation ranging from 5.8 metres below ground level (mbgl) at BH05 to 8.5mbgl at BH04.
- Bedrock was not encountered during the site investigations. However, refusal encountered during the drilling of the site investigation locations could potentially indicate that a boulder was encountered or possibly indicate the presence of bedrock.
- Groundwater was not encountered during borehole drilling or the excavation of the trial pits.

The site investigation locations are presented in Figure 6-7.

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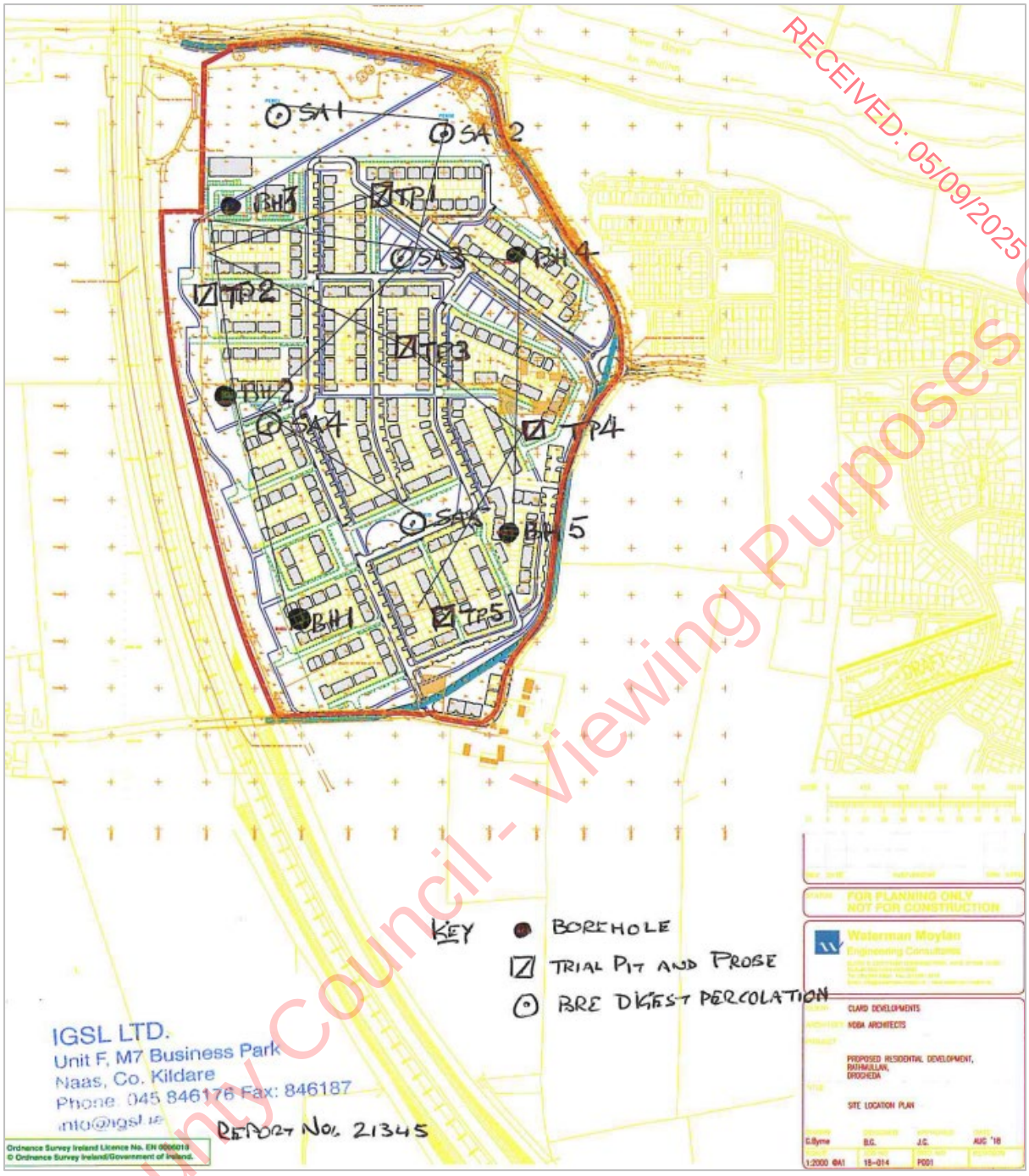



*Figure 6-7. Site Investigation and Monitoring Well Locations (Extract from WM, 2018)*

#### *6.3.8.1 Soil results*

Soil samples were collected during the installation of the groundwater monitoring wells (BH01 to BH05) (WM, 2018).

Eight environmental soil samples were taken at specific depths during the installation of the five groundwater monitoring wells at the site. The soil samples depth was as follows;

- BH01 at 1.00mbgl;
- BH20 at 1.00mbgl and 2.00mbgl;
- BH03 at 1.00mbgl and 2.00mbgl;

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- BH04 at 1.00mbgl;
- BH05 at 1.00mbgl and 3.00mbgl;

The soil results reported no exceedances of mineral oil, total petroleum hydrocarbons (TPHs), benzene, toluene, ethylbenzene, m&p-xylene, o-xylene and methyl tert-butyl ether, polycyclic aromatic hydrocarbons (PAHs) and polychlorinated biphenyls (PCBs). Asbestos was not detected in any of the soil samples analysed.

### 6.3.9 Geochemical Domain

The GSI along with the EPA have developed geochemically appropriate levels (GALs) for soil recovery facilities across Ireland specifically in relation to metals and metalloids in uncontaminated soil and stone (GSI, 2025). There are a total of seven defined domains across the country. The geochemical domains map indicates that the site is located within Domain 5, the subsoil composition is described as Lower Palaeozoic sandstones, shales, and igneous rocks.

A summary of the maximum expected metals concentrations for Domain 5 are presented below in Table 6-4.

*Table 6-4 Geochemically Appropriate Levels form Domain 5*

| Element | Units | Value |
|---|---|---|
| Arsenic | mg/kg | 41.5 |
| Cadmium | mg/kg | 1.42 |
| Chromium | mg/kg | 73.2 |
| Copper | mg/kg | 77.6 |
| Mercury | mg/kg | 0.302 |
| Nickel | mg/kg | 65.7 |
| Lead | mg/kg | 109.0 |
| Zinc | mg/kg | 224 |

### 6.3.10 Radon

The Radon Risk Map of Ireland (EPA, 2025) shows a prediction of the number of the houses in any one area that are likely to have high radon levels. The map is based on an analysis of indoor radon measurements plus geological information including, bedrock type, quaternary geology, soil permeability and aquifer type.

The majority of the site is mapped by the EPA (EPA, 2025) as being in an area where ‘about 1 in 10 homes in this area is likely to have high radon levels’ whereas a small area within the eastern boundary of the site is classified as an area where ‘about 1 in 5 homes in this area is likely to have high radon levels’.

The EPA cite the reference level for radon as 200 Bq/m$^3$ and a High Radon Area where more than 10% of homes may have more than the reference level of radioactivity. The majority of the site is classified as having ‘medium’ radon levels. However, the eastern part of the site is classified as having ‘high’ radon levels as more than 10% of the houses in the area are mapped by the EPA as being over this reference level. It is noted that a high radon level can be found in any home, in any part of the country, but these homes are more likely to be located in medium to high radon areas.

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### 6.3.11 Geohazards

The GSI (GSI, 2025) records for karst features indicate that there are five karst features within the 2km radius of the Proposed Development site.

- Enclosed depression (karst feature ID: IE_GSI_Karst_40K_1635) – approximately 1.7km northeast of the site.
- Spring (karst feature ID: IE_GSI_Karst_40K_3873) – approximately 1.33km north of the site.
- Swallow Hole (karst feature ID: IE_GSI_Karst_40K_2950) – approximately 1.44km northeast of the site.
- Superficial Solution Feature (karst feature ID: IE_GSI_Karst_40K_3874) – approximately 1.48km north of the site.
- Swallow Hole (karst feature ID: IE_GSI_Karst_40K_8042) – approximately 1.48km north of the site.

The site of the Proposed Development is located within an area with a 'low' landslide susceptibility (GSI, 2025). However, a small area adjacent to the eastern boundary of the site is classified as 'moderately low' and 'moderately high'. A small area adjacent to the northern boundary of the site is classified as 'moderately low'. There are no recorded landslides at the site (GSI, 2025). However, the closest recorded event, located approximately 1.8km southwest of the site, was associated with shallow rotational earth flow of irregular shape.

In Ireland, seismic activity is recorded by the Irish National Seismic Network operated by Dublin Institute for Advanced Studies (DIAS) which has been recording seismic events in Ireland since 1978. There are six permanent broadband seismic recording stations in Ireland operated by DIAS. Records since 2010 show that the majority of recorded seismic events were associated with quarry blasts and no recent events have been recorded within 2km of the site or the Greater Dublin Area.

### 6.3.12 Geological Heritage Sites

There are no geological heritage sites mapped by the GSI (GSI, 2025) within the site. The closest geological heritage site is located along the northern boundary of the site, the Boyne Valley (Site Code: MH011), which is described as '*A glacial U-shaped valley with characteristic depositional and erosional features associated with ice flow and glacial meltwater*'.

The geological heritage sites in the vicinity of the site are presented in Figure 6-8.

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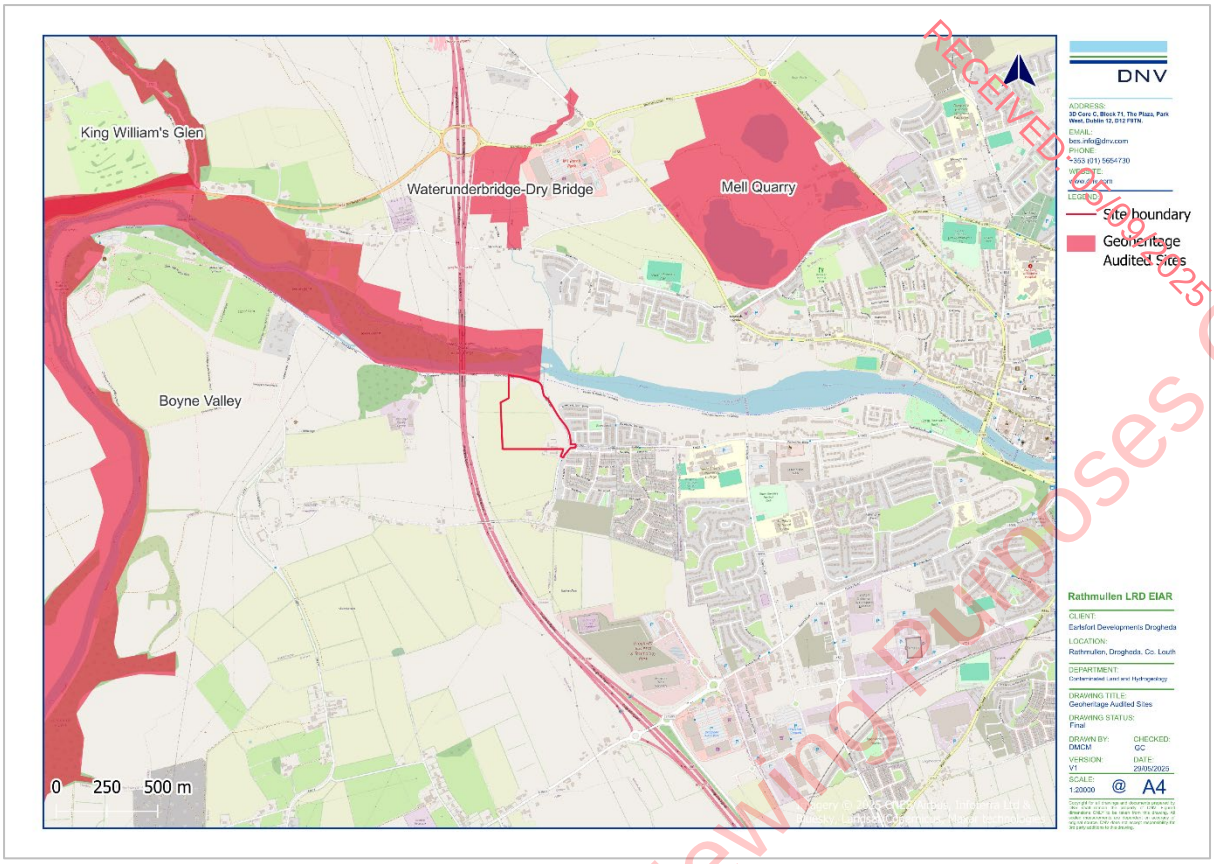



*Figure 6-8. Geological Heritage Sites*

### 6.3.13 Economic Geology

The lands beneath the site are mapped by the GSI (GSI, 2025) as having no mapped granular aggregate potential. However, the granular aggregate potential adjacent to the northern boundary of the site is classified as 'high' to 'very high' potential.

The bedrock beneath the site has been identified by the GSI (GSI, 2025) as having a 'high' potential for crushed rock aggregate.

### 6.3.14 Importance of Baseline Environment

The site is primarily undeveloped grasslands with some farm sheds/outbuildings within the southeastern boundary of the site. According to the GSI (GSI, 2025), the subsoils are mapped as having no granular aggregate potential, indicating that the economic extraction of granular aggregate from this site is not feasible. However, the bedrock is classified as having high potential for the extraction of bedrock aggregate.

The Boyne Valley (Site Code: MH011) geological heritage site is located along the northern boundary of the site.

Taking into account the attributes of the soil and geology underlying the site, and in accordance with the TII Guidance as documented by the NRA (NRA, 2009) and as outlined in Table 6-1, the soil and bedrock underlying the site of the Proposed Development would be rated as having an overall 'low' to 'high' geological importance respectively.

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## 6.4 Characteristics of the Proposed Development

A full description of the Proposed Development is outlined in Chapter 2 of this EIAR.

The following components are of particular relevance with respect to land, soil and geology during the construction phase and operational phase of the Proposed Development.

### 6.4.1 Construction Phase

The construction phase of the Proposed Development will include:

- Removal of topsoil and stockpiled onsite for reuse on completion of the works.
    - The stripping of topsoil will be undertaken on a phased basis so that no area is stripped until such time as works are imminent in that area.
    - Topsoil disturbed during the construction phase will be reused as much as practicable.
    - The surplus excavated topsoil will be removed to a licenced facility.
- Excavation of subsoil will be required to allow the construction of roads, building foundations, drainage, and ancillary services. The maximum excavation depths will be 4.645m, located at the site entrance. This is for drainage in a road area to be cut in at site access.
    - Based on the cut and fill analysis, the volume of cut (i.e., excavated material) is approximately 37,524.04m$^3$ and the volume of fill is approximately 12,437.84m$^3$ (refer to Drawing No. RAT-WMX-PH2-00-DR-C-P500 - Cut & Fill Analysis-Sub Base Level submitted with the planning application under separate cover). It is estimated that approximately 25,086.20m$^3$ of this soil material will be stockpiled temporarily before being removed from site.
    - It is estimated that approximately 6,534.31m$^3$ of additional soil and subsoil material will be excavated and removed offsite for the construction of the underground attenuation tanks and foul pumping station.
    - It is anticipated that there will be no requirement for the excavation of bedrock during the construction stage of the Proposed Development.
    - Excavated soil and subsoil materials will be reused for engineering fill and landscaping where possible.
- Temporary stockpiling of excavated material will be required pending re-use onsite or export offsite.
- The main contractor will ensure that surplus soil materials requiring removal offsite will be appropriately classified as non-hazardous or hazardous in accordance with the www.hazwasteonline.com application and EC Council Decision 2003/33/EC10, and transported to an appropriately authorised facility by permitted contractors following appropriate WAC (waste acceptance criteria) testing.
- Demolition of the existing farm buildings located within the southeastern boundary of the site. Asbestos was reported in a number of locations across the buildings (refer to Chapter 14 of the EIAR for further details).
    - Where asbestos containing materials (ACMs) are encountered during demolition works, these will be stored separately from inert materials or uncontaminated greenfield soil material pending removal offsite in accordance with the Resource and Waste Management Plan (RWMP) (DNV, 2025;

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submitted with the planning application under separate cover) and all relevant waste management legislation.

- Building foundations will consist of a traditional reinforced concrete foundation founded on 100 kPa allow bearing pressure stratum. The stratum is to be stiff natural ground. Where this stratum is deep, a lean mixed trench will be constructed below the foundations to effectively found in the required stratum.
- There will be large quantities of materials brought to the site to facilitate construction such as concrete, concrete blocks, timber, reinforcement, pipework, insulation, fixings, plasterboard, etc. (refer to Chapter 14 of the EIAR for further details).
- Aggregate materials imported to the site (i.e., natural stones and gravel, aggregates, and related fill products) will be sourced from locally available quarries in accordance with the appropriate statutory guidelines.

### 6.4.2 Operational Phase

The operational stage of the Proposed Development consists of the typical activities in a residential development and with the exception of localised landscaped areas (i.e., gardens, recreational areas, etc.), there will be no bulk excavation of soils or bedrock or infilling of waste.

The land use at the site will change from undeveloped lands to residential development with associated vehicular and pedestrian access, car parking and landscaping.

With the exception of rainfall on landscaped areas of the site and small quantities of rainfall to SuDS, there will be no discharges to ground during the operational phase of the Proposed Development.

There will be no requirement for bulk storage of petroleum hydrocarbon-based fuels or supply of natural gas during the operational phase of the Proposed Development. As documented in the Energy, Utilities and Telecommunications Statement (McElligott, 2025), the development relies on electrically powered heat pumps. Further details are provided in Chapter 14 of this EIAR.

## 6.5 Potential Effect of the Proposed Development

The procedure for determination of potential effects on the receiving land, soils and geology is to identify potential receptors within the Proposed Development site boundary and surrounding environment and use the information gathered during the desk study and site walkover to assess the degree to which these receptors will be effected upon in the absence of mitigation.

The assessment will identify the likely effects during the construction and operational phases of the Proposed Development. This will involve assessing the significance of any potential effects by determining the sensitivity of the receptors and the magnitude of the potential effect. Effects are described in terms of quality, significance, duration and type as detailed in Table 6-2.

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### 6.5.1 Construction Phase

#### *6.5.1.1 Land Take and Land Use*

The Proposed Development will require approximately 9.20ha. of land and will change from primarily undeveloped grasslands to residential use.

The change in land use is in accordance with the zoning objectives as set out in the current Meath County Development Plan 2021 – 2027 (MCC, 2021). Further details regarding the legislative context and alignment with strategic, national, regional, and local planning policies and objectives are provided in Chapter 3 of this EIAR.

As a result, the development will involve an unavoidable land take, leading to a 'negative', 'significant', and 'permanent' effect on land and soil, particularly when assessed in the context of surrounding land uses and zoning objectives. This is considered significant in the context of the EIA Directive.

#### *6.5.1.2 Excavation and Removal of Soil and Subsoil*

It is anticipated that there will be no requirement for the excavation of bedrock during the construction phase of the Proposed Development. However, there will be an unavoidable loss of in situ soils and subsoils from the site to achieve the required formation levels for the Proposed Development including building foundations, roads, drainage and other infrastructure.

The construction of the Proposed Development will require the excavation of 44,058.35m$^3$ of soil and subsoil. It is intended to reuse approximately 12,437.84m$^3$ of excavated soil and subsoil for landscaping and engineering use. However, it is anticipated that approximately 31,620.51m$^3$ of surplus and unsuitable material will require removal offsite. The soils and subsoils underlying the site of the Proposed Development are considered to be of 'low' importance. Accordingly, there will be a 'negative' 'slight' and 'permanent' effect on the underlying soils at the site and is considered non-significant in the context of the EIA Directive.

The removal of surplus soil offsite will be undertaken in accordance with applicable statutory requirements. This may include where suitable, removal as by-products that meet the legislative requirements of Article 27 of the European Communities (Waste Directive) Regulations, 2011. The potential effect with removal offsite of surplus soil and other material as waste is assessed in Chapter 14 of this EIAR.

#### *6.5.1.3 Soil Quality and Contamination*

**Reuse of Soil and Subsoil**

The site is currently a greenfield site. However, it contains a localised area in the southeastern part of the site comprising a number of derelict farm buildings/structures and therefore, there is a potential for low quality made ground to be present within this localised area of the site.

The excavation and reuse of soil onsite will be subject to control procedures which will include soil quality testing to ensure suitability for onsite use in accordance with engineering and environmental specification for the Proposed Development that will be determined during the detailed design phase. Therefore, the reuse of soils onsite will result in a 'neutral', 'imperceptible' and 'permanent' effect on the quality of shallow soils underlying the site and is considered non-significant in the context of the EIA Directive.

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**Concrete Works**

There is a potential risk associated with the use of cementitious materials during construction of subsurface structures (such as building foundations) on the underlying soil and geology at the Proposed Development. It is considered that this may result in a 'negative', 'moderate' and 'long-term' effect on existing quality of soil within a localised area underlying the site and is considered non-significant in the context of the EIA Directive.

**Piling**

It is noted that piling during the construction phase of the Proposed Development, may potentially create pathways for contaminants such as grout or other materials to enter the underlying hydrogeological environment. The potential effect with piling is assessed in Chapter 7 of this EIAR.

**Handling of Fuels and Hazardous Materials**

The potential accidental release of deleterious materials including fuels and other materials being used onsite, through the failure of secondary containment or a materials' handling accident on the Proposed Development could potentially result in a 'negative', 'moderate to significant', 'long-term' effect on the receiving soil and geology depending on the nature of the incident. It is noted that this effect is considered significant in the context of the EIA Directive due to the potential for long-term degradation of the effected soils in the absence of mitigation. This worst-case scenario is deemed to be unlikely to occur.

#### *6.5.1.4 Soil Structure*

The excavation and re-use of soil at the site (where possible) will result in the exposure of the materials to various elements including weather, construction traffic and temporary stockpiling. This exposure can lead to changes in the soil's moisture content, temperature, and structure (e.g., rain can cause the soil to become waterlogged, dry weather can lead to desiccation and cracking, movement of construction vehicles and equipment over the soil can cause compaction and disturbance reducing the soil's porosity, making it less able to absorb water and nutrients). Over time, the soil may become less cohesive and more prone to erosion and instability. The combined effects of exposure to elements, construction traffic, and temporary stockpiling will have a potential 'negative,' slight' and 'long term' effect on the natural strength of the materials and is considered non-significant in the context of the EIA Directive.

#### *6.5.1.5 Importation of Fill Materials*

The importation of aggregate fill materials will be required for the construction of the Proposed Development (i.e., granular material beneath road pavement, drainage and utility bedding / surrounds, etc.). The potential effects may include loss of attribute and changes in the geological regime at the source site. It is anticipated that the required aggregates identified for importation onsite will be 'indirect' and have a 'neutral,' 'imperceptible' and 'permanent' effect on the source site. This effect is considered imperceptible and non-significant in the context of the EIA Directive taking account of the fact that the statutory consent process would have required the necessary environmental effects to be assessed and mitigated as appropriate at the source site

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#### *6.5.1.6 Dust Generation*

There is a potential for creation of windblown dust generation from the temporary stockpiling of materials onsite. There will be some exhaust emissions generated from use of excavators, HGVs (heavy goods vehicles) and vibrating rollers during the construction phase of the Proposed Development. An assessment of the potential effect of the Proposed Development with regard to the generation of dust is addressed in Chapter 8 of this EIAR.

#### *6.5.1.7 Geological Heritage Sites*

The Boyne Valley (Site Code: MH011) geological heritage site is located along the northern boundary of the site. There are no geological heritage sites located within the site of the Proposed Development and the construction works for the Proposed Development will occur outside the identified heritage sites. However, in the absence of avoidance and mitigation measures, in a worst-case scenario, there is a potential for fuel spill from the works area flowing overland and entering the downgradient geological heritage sites. In this unlikely scenario, there is a potential 'negative' 'moderate' and 'medium- term' effect on the receiving geological heritage site. The effect is considered moderate and non-significant in the context of the EIA Directive given the scale of the feature, and that any effect would be localised.

#### *6.5.1.8 Geological Hazards*

The site is not located within an area associated with karst geology and therefore there are no identified risks associated with karst features. The predicted effects are considered to be imperceptible and not significant in the context of the EIA Directive.

As detailed in section 6.6.1.1, all aggregates imported to the site for use in the Proposed Development will be subject to strict quality control procedures in accordance with the design specification and relevant Building Regulations therefore avoiding any potential issues with pyrite and other deleterious material in aggregates. Therefore, the predicted effects are considered to be imperceptible and not significant in the context of the EIA Directive.

Overall, it is considered that the potential effects on geohazards during the construction phase of the Proposed Development will have a 'neutral,' imperceptible' and 'permanent effect and are not significant in the context of the EIA Directive.

### 6.5.2 Operational Phase

During the operational phase of the Proposed Development there is a limited potential for any direct adverse effect on the receiving land, soil and geological environment at the site taking account of the design for the Proposed Development.

The design and construction of the Proposed Development will be undertaken in accordance with current Building Regulations which will ensure that the site will be suitable for use for the operational phase as a residential development taking account of the geological site setting.

Earthquakes are not likely to occur in the vicinity of the Proposed Development site at a sufficient intensity to pose a risk to the Proposed Development. The GSI (GSI, 2025) database indicates that the Proposed Development site is located within an area of low susceptibility to landslides. Furthermore, there are no potential ground stability hazards identified for the site.

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A small area within the eastern boundary of the site is identified as being located within a 'High' Radon Area. The design and specification for all buildings will be in accordance with current Building Regulations and therefore any potential issues associated with radon will be addressed and avoided. Therefore, the predicted effects are considered to be imperceptible and not significant in the context of the EIA Directive.

Overall, the predicted effects on the receiving land, soil and geological environment during the operational phase of the Proposed Development are considered to be 'neutral,' imperceptible' and 'permanent' and are not significant in the context of the EIA Directive.

### 6.5.3 Potential Cumulative Effects

Cumulative effects can be defined as "effects that result from incremental changes caused by other past, present or reasonably foreseeable actions together with the project". Effects which are caused by the interaction of effects, or by associated or off-site projects, are classed as indirect effects. Cumulative effects are often indirect, arising from the accumulation of different effects that are individually minor. Such effects are not caused or controlled by the project developer. The cumulative impacts also take into account the combined effects of the Proposed Development and other projects in the surrounding area, particularly where actions occur within the same timeframe.

The consideration of potential cumulative effects is an important stage in the EIA process. Although the Proposed Development may not result in significant residual effects in isolation, when the Proposed Development is considered cumulatively with other projects, significant residual effects may occur. Therefore, as part of this assessment, other offsite developments and proposed offsite developments as detailed in Chapter 2 of this EIAR were reviewed and considered for possible cumulative effects with the Proposed Development.

#### *6.5.3.1 Construction Phase*

**Excavation and Removal of Soil and Subsoil**

Excavated soil, subsoil and bedrock, if encountered, during the construction phase of the Proposed Development could potentially be directed to the same receiving waste facilities for recovery / disposal as excavated materials from other developments detailed in Chapter 2 of this EIAR and within the wider Meath Area. All surplus soils and subsoils from the site will be removed offsite in accordance with the requirements of the RWMP (DNV, 2025) and all statutory legislation. Accordingly, it is considered that any cumulative effect on lands, soils and geology associated with the Proposed Development will be 'neutral', 'imperceptible' and 'permanent' and is considered non-significant in the context of the EIA Directive.

**Import of Aggregates and Materials**

The importation of aggregates to the Proposed Development may be sourced from the same borrow site as other permitted developments detailed in Chapter 2 of this EIAR and within the wider Meath Area. However, contract and procurement procedures will ensure that all aggregates and fill material originating from quarry sources that will be required for construction are sourced from reputable authorised suppliers operating in a sustainable manner and in accordance with the necessary statutory consents. Therefore, regardless of the number of other projects and developments using aggregates from the same source sites, there will be an 'indirect', 'neutral', 'imperceptible' and 'permanent' effect on the geological

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environmental at the source site and it is considered non-significant in the context of the EIA Directive.

There are no other cumulative effects associated with land, soil and geology associated with the construction phase of the Proposed Development.

#### *6.5.3.2 Operational Phase*

There will be no cumulative effects on land, soil and geology during the Operational Phase of the Proposed Development.

### 6.5.4 "Do Nothing" Effect

The 'Do Nothing' scenario assesses the potential effect on the receiving land, soils, and geological environment if the Proposed Development did not proceed.

In the 'Do Nothing' scenario, there would be no change or resulting effect on the nature of the site with respect to land, soil and geology as the site of the Proposed Development would remain as undeveloped grasslands in the immediate term. However, the proposed change in land use is in accordance with the zoning objectives as set out in the current Meath County Development Plan 2021 – 2027 (MCC, 2021). Therefore, while the site would remain undeveloped in the short term, the potential for future development remains. As such, even in the absence of the Proposed Development, it is considered that the types of construction and operational phase effects assessed in this chapter of the EIAR may still occur in the future, albeit under a different development proposal. In this scenario, the current assessment remains relevant as an indication of the likely nature and scale of effects on land, soil and geology associated with residential development on the site.

## 6.6 Avoidance, Remedial & Mitigation Measures

The mitigation measures as outlined below, will ensure that there will be no significant effect on the receiving land, soil and geology.

### 6.6.1 Construction Phase

During the construction phase, all works will be undertaken in accordance with the Construction Waste Management Plan (CWMP) / Construction Environmental Management Plan (CEMP) (WM, 2025b and WM, 2025c included in Appendix 6-1) and the Resource and Waste Management Plan (RWMP) (DNV, 2025). Following appointment, the contractor will be required to further develop the CWMP, CEMP and RWMP to provide detailed construction phasing and methods to manage and prevent any potential emissions to ground and surface water with regard to the relevant industry standards (e.g., Guidance for Consultants and Contractors, CIRIA-C532', CIRIA, 2001). The CWMP, CEMP and RWMP will be implemented for the duration of the construction phase, covering construction and waste management activities that will take place during the construction phase of the Proposed Development.

#### *6.6.1.1 Import of Aggregates and Materials*

Contract and procurement procedures will ensure that all imported aggregates and materials required for the construction phase of the Proposed Development will be sourced from reputable suppliers operating in a sustainable manner and in accordance with industry



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conformity/compliance standards and statutory obligations. The importation of aggregates and materials will be subject to management and control procedures which will include testing for contaminants, invasive species and other anthropogenic inclusions and assessment of the suitability for use in accordance with engineering and environmental specifications for the Proposed Development. Therefore, any unsuitable material will be identified prior to unloading / placement onsite.

#### *6.6.1.2 Airborne Dust Generation*

Dust and fine particle generation from construction and demolition activities on the site can be substantially reduced through the selection of adequate mitigation techniques and effective management. The most effective technique is to control dust at source and prevent it from becoming air borne by implementing the following mitigation measures:

- Excavated soils will be carefully managed and maintained in order to minimise potential effect on soil quality and soil structure.
- Handling of soils and materials will be undertaken in accordance with documented procedures outlined in the CWMP, CEMP and RWMP that will be set out in order to protect ground and minimise airborne dust.
- The normal measures required to prevent airborne dust emissions and associated nuisance arising from site work will be in place including measures to prevent uncovered soil drying out leading to wind pick up of dust and mud being spread onto the local road network and adjoining properties. This may require additional wetting at the point of dust release, dampening down during dry weather and wheel cleaning for any vehicles leaving the site.
- Vehicles travelling on any unsurfaced site roads shall have their speed restricted to 20 kph.
- Footpaths immediately around the site will be cleaned by hand regularly, with damping as necessary.
- High level walkways and surfaces such as scaffolding shall be cleaned regularly using safe ‘wet’ methods, as opposed to dry methods.
- Vehicle waiting areas or hard standings will be regularly inspected and kept clean by brushing or vacuum sweeping and will be regularly sprayed to keep moist, if necessary.
- Dust dispersal over the site boundary shall be minimised using static sprinklers or other watering methods as necessary.
- Equipment and techniques for cutting / grinding / drilling / sawing / sanding etc, which minimise dust emissions and which have the best available dust suppression measures, shall be employed
- Prior to commencement, the main contractor shall identify the construction operations which are likely to generate dust and to draw up action plans to minimise emissions, utilising the methods highlighted above. Furthermore, the main contractor shall prepare environmental risk assessments for all dust generating processes which are envisaged.
- The main contractor shall allocate suitably qualified personnel to be responsible for ensuring the generation of dust is minimised and effectively controlled.
- The name and contact details of a person to contact regarding air quality and dust issues shall be displayed on the site boundary, this notice board shall also include head/regional office contact details.

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- Where asbestos containing materials (ACMs) are encountered during demolition works, these will be managed in accordance with the Safety, Health and Welfare at Work (Exposure to Asbestos) Regulations 2006–2010 and the Construction Regulations 2013, including the use of licensed asbestos contractors, appropriate risk assessments, and safe removal and disposal procedures as outlined by the Health and Safety Authority.

Potential effects and avoidance and mitigation measures associated with generation of dust are addressed in Chapter 8 of this EIAR.

#### *6.6.1.3 Reuse of Soil*

Soil and subsoil materials to be reused within the Proposed Development (i.e., for engineering fill and landscaping) will be subject to assessment of suitability for use in accordance with engineering and environmental specification for the Proposed Development. This will include:

- Defining the criteria by which the suitability of the soils for reuse will be assessed (e.g., analytical parameters and limits), the engineering requirements such as geotechnical parameters for the material to be used within the works.
- Delineation of areas where excavated soil is intended for disposal offsite as waste, and where it is intended for reuse on site.
- Identification and recording of the location from where the soil will be excavated and its proposed reuse location and function.
- Engineering assessment to confirm its suitability for reuse.
- Any proposed treatment or processing required to enable its reuse, as well as any associated treatment permits, or licences required.
- All topsoil stripping associated with the Proposed Development will be monitored by a suitably qualified licensed archaeologist making sure to include any non-natural subsoil deposits to ensure that any potential archaeological features are exposed in the works. The licensed archaeologist onsite will be responsible, on behalf of the developer, for the identification and appropriate treatment (e.g. excavation and recording) of all archaeological remains encountered. The results of all excavations, including site evaluation and monitoring, will be compiled into a fully illustrated report.

#### *6.6.1.4 Management and Control of Soils and Stockpiles*

Segregation and storage of soils for re-use onsite or removal offsite and waste for disposal offsite will be segregated and temporarily stored onsite pending removal or for reuse onsite in accordance with the CEMP (WM, 2025c) which will be updated by the main contractor in advance of construction works commencing.

Where possible, stockpiling of soil and stone onsite will be avoided. However, in the event that stockpiling is required, stockpiled materials, pending reuse onsite, will be located away from the location of any sensitive receptors (i.e., drains / watercourses).

When a stockpile has been sampled for re-use or waste classification purposes, it will be considered to be complete, and no more soil will be added to that stockpile prior to removal. An excavation/stockpile register will be maintained on-site.

The reuse of suitable excavated soil and subsoil for the Proposed Development (i.e., landscaping or engineering) will be undertaken in accordance with the engineered design and landscape plan for the Proposed Development.

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Stockpiling of excavated material (i.e., soils and subsoils) should be avoided. However, where required (i.e., awaiting reuse onsite or removal offsite), it will be appropriately managed onsite during the construction phase of the Proposed Development in accordance with the measures outlined in the CEMP (WM, 2025c). To minimise the overall effect on soils arising during the construction works, the following mitigation measures will be adhered to.

- A suitable temporary storage area will be identified and designated.
- All stockpiles will be assigned a stockpile number.
- Material identified for reuse on site, off site and waste materials will be individually segregated; and all segregation, storage & stockpiling locations will be clearly delineated on the site drawings.
- Soil stockpiles will be covered to prevent run-off from the stockpiled material and/or the generation of dust.
- Material identified for reuse on site, off site and waste materials will be individually segregated.
- Topsoil should not be stored in piles of greater than two metres in height as the soil matrix (internal structure) can be damaged beyond repair. It should also be kept as dry as possible and used as soon as possible to reduce any deterioration through lengthy storage and excess moving around the site.
- Any waste that will be temporarily stored / stockpiled will be stored on impermeable surface high-grade polythene sheeting, hardstand areas or skips to prevent cross-contamination of the soil below or cross contamination with soil.
- Regular watering will take place to ensure the moisture content is high enough to increase the stability of the soil and thus suppress dust.
- Stockpiles of materials shall be kept to a minimum and if necessary, they shall be kept away from sensitive receptors such as residential areas etc.
- Stockpiles where necessary, shall be sheeted or watered down.
- Earthworks excavations shall be kept damp where necessary and where reasonably practicable.

Any waste generated from construction activities, including concrete, asphalt and soil stockpiles, will be managed in accordance with the procedures which will be outlined in the CWMP (WM, 2025b) and RWMP (DNV, 2025) and the project specific RWMP and will be stored onsite in such a manner as to:

- Prevent environmental pollution (bunded and/or covered storage, minimise noise generation and implement dust/odour control measures, as may be required).
- Maximise waste segregation to minimise potential cross contamination of waste streams and facilitate subsequent reuse, recycling and recovery.
- Prevent hazards to site workers and the general public during the construction phase (largely noise, vibration and dust).

Prior to site works commencing, the CWMP (WM, 2025b) and RWMP (DNV, 2025) will be updated to reflect specific measures to minimise waste generation and resource consumption, including providing details of proposed waste contractors and destinations for each waste stream.

#### *6.6.1.5 Soil Structure*

The extent of the required work area and the bulk excavation at the site will be minimised where appropriate to prevent unnecessary excavation of soil and tracking over soil and subsoil

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outside of the excavation work areas as a result of compaction and rutting from construction traffic.

Soil including topsoil and subsoil will be segregated and stored appropriately to prevent deterioration of soil structure and quality to ensure the material will be suitable for re-use onsite.

#### *6.6.1.6 Export of Resource (Soil and Subsoil) and Waste*

All surplus materials and any waste will be removed offsite in accordance with the requirements outlined in the CWMP (WM, 2025b), CEMP (WM, 2025c) and RWMP (DNV, 2025) and will be managed in accordance with all legal obligations.

It will be the contractor's responsibility to either; obtain a waste collection permit or, to engage specialist waste service contractors who will possess the requisite authorisations for the collection and movement of waste offsite.

Where appropriate, excavated soil and material intended for recovery or disposal offsite will require appropriate waste classification in order to select an appropriate receiving facility. Assessment of the excavated material will be carried out with due regard to the following guidance and legislation:

- Environmental Protection Agency document entitled Waste Classification; List of waste and determining if waste is Hazardous or Non-Hazardous.
- EU Council Decision 2003/33/EC establishing criteria and procedures for the acceptance of waste at landfills pursuant to Article 16 and Annex II of Directive 1999/31/EC (2002).
- Environmental Protection Agency documented entitled Guidance on Waste Acceptance Criteria at Authorised Soil Recovery Facilities.
- Environment Agency, 2018. Technical Guidance WM3: Guidance on the classification and assessment of waste.
- Any other guidance or legislation that might be applicable or relevant at the time of disposal.

Additionally, it will be the contractor's responsibility involved in the refurbishment/demolition works (i.e., southeastern portion of the site) to identify the asbestos materials and to ensure that appropriate remedial measures are introduced prior to any structural alterations, refurbishment or demolition works commencing. All the asbestos removal works should be carried out by a competent asbestos removal contractor in accordance with Asbestos at Work Regulations 2006 to 2010. Statutory notification requirements of 14 days are required under the provisions of the Asbestos Regulations for certain works involving asbestos. The contractor appointed for removal works is responsible for deciding if a 14 day notification is required and for drawing up a plan of work for any removal works. Further details are included in Chapter 14 of this EIAR.

The re-use of soil and rock offsite will be undertaken in accordance with all statutory requirements and obligations including where appropriate re-use as by-product in accordance with Article 27 of the European Communities (Waste Directive) Regulations 2011 (SI No. 126 of 2011) as amended. Any surplus material not suitable for re-use as a by-product and other waste materials arising from the construction phase will be removed offsite by an authorised contractor and sent to the appropriately authorised (licensed/permitted) receiving waste facilities. As only authorised facilities will be used, the potential effects at any authorised

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receiving facility sites will have been adequately assessed and mitigated as part of the statutory consent procedures.

Any waste soils will be transported under a valid waste collection permit issued under the Waste Management (Collection Permit) Regulations 2007, as amended and will be delivered to an appropriately authorised waste management facility. Where hazardous waste requires removal offsite, the contractor will ensure compliance with the Waste Management (Hazardous Waste) Regulations 1998 (as amended very frequently) and the European Communities (Shipments of Hazardous Waste exclusively within Ireland) Regulations 2011, unless it is exempted from compliance with those Regulations under article 35 of the Collection Permit Regulations. Hazardous waste will only be given to a collector or haulier with a collection permit under the Waste Collection Permit Regulations and the collector or haulier must bring the waste to a licensed hazardous waste management facility and ensure that it is shipped within Ireland in accordance with the stringent requirements of the European Communities (Shipments of Hazardous Waste exclusively within Ireland) Regulations 2011 and/or exported from Ireland in accordance with the Waste Management (Shipments of Waste) Regulations 2007 (as amended) and Council Regulation (EC) No.1013/2006 on shipments of wastes, as amended (the "TFS Regulations).

Materials and waste will be documented prior to leaving the site. All information will be entered into a waste management register kept on the site.

Vehicles transporting material with potential for dust emissions to an offsite location shall be enclosed or covered with a tarpaulin at all times to restrict the escape of dust.

Public roads outside the site will be regularly inspected for cleanliness, at a minimum on a daily basis, and cleaned as necessary. Where required, trucks entering / leaving the site will pass through a wheel washing system. The wheels of all lorries will be cleaned as required prior to leaving the site to prevent the generation of dust or cause the build-up of aggregates and fine material in the public domain. The correct use and management of the wheel washing system (where required) will be undertaken by the main contractor to ensure that there is no harm or effect to the receiving water environment.

#### *6.6.1.7 Concrete Works*

The use of cementitious grout used during the construction phase of the Proposed Development will avoid any contamination of the receiving hydrogeological environment through the use of appropriate design and methods implemented by the appointed contractor and in accordance with the CEMP (WM, 2025b), and relevant industry standards to prevent effect on groundwater and surface water quality such as the use of water compatible grout.

The following are mitigation measures that need to be adhered to when using concrete for the Proposed Development:

- All ready-mixed concrete will be delivered to the site by truck.
- Concrete batching will take place offsite.
- Wash down and wash out of concrete trucks will take place into a container located within a controlled bunded area which will then be emptied into a skip for appropriate compliant removal offsite in accordance with all relevant waste management legislation.
- Any excess concrete is not to be disposed of onsite.

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- Pouring of cement-based materials for works will only be carried out in dry conditions and pumped concrete will be monitored to ensure there is no accidental discharge.
- A suitable risk assessment for wet concreting shall be completed prior to works being carried out. Pumped concrete will be monitored to ensure there is no accidental discharge.
- Pouring of concrete will not be permitted within 50m of any watercourse during inclement weather.

#### *6.6.1.8 Handling of Fuels, Chemicals and Materials*

Fuelling and lubrication of equipment will be carried out in accordance with the procedures outlined in the CEMP (WM, 2025b), in a designated area of the site (i.e., bunded areas) away from any watercourses and drains (where not possible to carry out such activities offsite) with full attendance of plant operatives.

Fuel will not be stored onsite for the duration of the construction phase. Fuel will only be brought to site via mobile fuel bowser. Any other oils or hydraulic oils stored onsite will be stored in designated areas in suitable tanks and containers. These areas will be bunded and located away from surface water drainage and features (i.e., bunded compounds at the Contractor's compound on flat ground or at a location at least 50m from any watercourse or other water conducting features, including the cut off trenches).

- Bunds will have regard to Environmental Protection Agency Guidelines 'Amendment to IPC Guidance Note on Storage and Transfer of Materials for Scheduled Activities' (EPA, 2013). All tank and drum storage areas will, at a minimum, be bunded to a volume not less than the greater of the following:
  - 110% of the capacity of the largest tank or drum within the bunded area; or
  - 25% of the total volume of substance that could be stored within the bunded area.
- Strict supervision of contractors will be adhered to in order to ensure that all plant and equipment utilised onsite is in good working condition.
- Any equipment not meeting the required standard will not be permitted for use within the Proposed Development site.
- Only emergency breakdown maintenance will be carried out onsite.
- Drip trays and spill kits will be available onsite to ensure that any spills from vehicles are contained and removed offsite.
- Spill kits will be made available and kept onsite at all times and identified with signage for use in the event of an environmental spill or leak.
- A spill kit will be kept in close proximity to the fuel storage area for use in the event of any incident during refuelling or maintenance works.
- Heavy machinery used on the site will also be equipped with its own spill kit.
- Method statements for dealing with accidental spillages will be provided to the Contractor for review by the Employer's Representative.
- There may also be the requirement for use of portable generators or similar fuel containing equipment during the construction phase of the Proposed Development, which will be placed on suitable drip trays. Regular monitoring of drip tray content will be undertaken to ensure sufficient capacity is maintained at all times.
- Suitable bunded areas will be installed for oil and petrol storage tanks.

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- Designated fuel filling points will be put in place with appropriate oil and petrol interceptors to provide protection from accidental spills.
- Spill kits will be provided by the main contractor to cater for any other spills.
- Where contractors are required to refuel vehicles, this will only be carried out at the designated refuelling location within the site storage compound, which must employ pollution control mechanisms to prevent escape of fluids to the river. No refuelling is permitted on site (i.e. within a river or adjacent to a river due to risk of spillage).
- The local authority will be informed immediately of any spillage or pollution incident that may occur on-site during the construction phase.

#### *6.6.1.9 Emergency Procedures*

Emergency procedures will be developed by the appointed Contractor in advance of works commencing and spillage kits will be available onsite including in vehicles operating onsite. Remedial action will be immediately implemented to address any potential effects in accordance with industry standards and legislative requirements, which will ensure minimal risk to the receiving hydrological and hydrogeological environment associated with the construction phase of the Proposed Development. The following mitigation measures will be adhered to as follows:

- Any required emergency vehicle or equipment maintenance work will take place in a designated impermeable area within the Proposed Development site.
- Emergency response procedures and contingency plans will be put in place, in the unlikely event of emergency accidents (i.e., spillages of fuels or lubricants).
- Spill kits, including oil absorbent material, will be provided and available onsite, so that any spillage of fuels, lubricants or hydraulic oils will be immediately contained.
- In the event of a leak or spill from equipment in the instance of a mechanical breakdown during operation, any contaminated soil will be removed from the Proposed Development site and compliantly disposed offsite. Residual soil will be tested to validate that all potentially contaminated material has been removed. This procedure will be undertaken in accordance with industry best practice procedures, standards and EPA guidelines.
- All site staff (i.e., construction staff) staff will be familiar with the emergency procedures in the event of accidental fuel spillages.
- All construction works staff onsite will be fully trained on the use of equipment.

This procedure will be undertaken in accordance with industry best practice procedures and standards. These measures will ensure that there is minimal risk to the receiving land, soil and geology associated with the construction stage of the Proposed Development.

#### *6.6.1.10 Welfare Facilities*

Welfare facilities have the potential, if not managed appropriately, to release organic and other contaminants to ground or surface water courses. Foul drainage from temporary welfare facilities during the construction phase of the Proposed Development will be discharged to temporary holding tank(s) the contents of which will periodically be tankered offsite to a licensed facility. All waste from welfare facilities will be managed in accordance with the relevant statutory obligations by an appropriately authorised contractor.

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Any connection to the public foul drainage network during the construction phase of the Proposed Development will be undertaken in accordance with the necessary temporary discharge licences issued by Uisce Eireann (UE).

### 6.6.2 Operational Phase

Taking account of the design of the Proposed Development, it is concluded that there will be no likely significant effects on the receiving land, soil, or geological environment during the operational phase. The predicted effects are considered to be imperceptible and not significant in the context of the EIA Directive. Therefore, there is no requirement for mitigation measures for the Operational Phase.

### 6.6.3 "Worst Case" Scenario

The potential accidental release of hazardous material including fuels, or other hazardous materials being used onsite during the construction phase could potentially effect on the receiving land, soil and geology environment. This scenario would only occur through the failure of secondary containment or a major incident on the site. The potential for or inadvertent import of contaminated materials during the construction phase could also result in an effect in the absence of the quality control measures. However, taking account of the mitigation measures any environmental harm would be avoided. There would therefore be a 'neutral', 'imperceptible' and 'short-term' effect on the receiving environment. These worst-case scenarios are deemed to be highly unlikely to occur.

## 6.7 Residual Effects

Residual effects are defined as 'effects that are predicted to remain after all assessments and mitigation measures'. They are the remaining 'environmental costs' of a project and are the final or intended effects of a development after mitigation measures have been applied to avoid or reduce adverse effects.

The predicted effects of the construction phase and operational phase of the Proposed Development are described in Section 6.5 in terms of quality, significance, extent, likelihood, and duration.

These assessments informed the development of a comprehensive suite of mitigation measures as detailed in Section 6.6. These included control and management of earthworks, control and management of soils, subsoils and stockpiles, management and control procedures for the exportation of surplus soils and subsoils, management and control procedures for the importation of aggregates and materials, control and handling of cementitious materials, control and handling of fuel and hazardous materials, and accidental release of contaminants. The effectiveness of these measures was assessed in terms of their ability to break pollutant linkages and reduce the magnitude and likelihood of effects. The residual effects, which take these measures into account, are summarised in Table 6-5.

Overall, considering the avoidance, remedial and mitigation measures detailed in Section 6.6, the residual effects regarding the construction phase and operational phase of the Proposed Development are considered 'imperceptible' to the receiving environment (land, soil and geology) and considered non-significant in the context of the EIA Directive.

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*Table 6-5. Residual Effects*

| Activity | Attribute | Predicted Effect | Quality | Significance | Duration | Type | Mitigation | Residual Effect |
|---|---|---|---|---|---|---|---|---|
| **Construction Phase** | | | | | | | | |
| Construction of the Proposed Development | Land Take and Land Use | The Proposed Development will require a land take of 9.20Ha and will change from undeveloped grasslands to residential land use. | Negative | Significant | Permanent | Direct | Unavoidable and no mitigation. The Proposed Development is in line with the zoning objectives as set out in the Meath County Development Plan 2021-2027. | Significant |
| Removal of Soil and Subsoil Not Suitable for Re-use Onsite | Soils and Subsoils | The construction of the Proposed Development will require the excavation of 44,058.35$m^3$ of soil and subsoil. It is intended to reuse approximately 12,437.84$m^3$ of excavated soil and subsoil for landscaping and engineering use. However, it is anticipated that approximately 31,620.51$m^3$ of surplus and unsuitable material will require removal offsite. | Negative | Slight | Permanent | Direct | None required. Where possible, it is intended to retain and re-use suitable excavated soil and subsoil for engineering fill and landscaping. The removal of surplus soil offsite will be undertaken in accordance with applicable statutory requirements. This may include where suitable, removal as by-products that meet the legislative requirements of Article 27 of the European Communities (Waste Directive) Regulations, 2011. | Slight |
| Excavation and Removal of in- | Lands, Soils and Geology | Excavated soil and subsoil during the construction | Negative | Slight | Permanent | Indirect / Cumulative | All surplus soils and subsoils from the site will | Imperceptible |

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| Activity | Attribute | Predicted Effect | Quality | Significance | Duration | Type | Mitigation | Residual Effect |
|---|---|---|---|---|---|---|---|---|
| situ Soil and Subsoil | at Destination Site | phase of the Proposed Development could potentially be directed to the same receiving waste facilities for recovery / disposal as excavated materials from other developments. | | | | | be removed offsite in accordance with the requirements of the CWMP (WM, 2025b) and RWMP (DNV, 2025) and all statutory legislation. | |
| Reuse of Excavated Soil | Land and Soil | It is intended to reuse approximately 12,437.84m$^3$ of excavated soil and subsoil for landscaping and engineering use. | Neutral | Imperceptible | Permanent | Direct | The re-use of soil onsite will be subject to control procedures which will include soil quality testing to ensure suitability for use onsite and in accordance with engineering and environmental specification for the Proposed Development. | Imperceptible |
| Use of Cementitious Materials | Soils and Subsoils | Potential release of cementitious material during construction of subsurface structures (such as foundations) to the land, soil, and geological environment. | Negative | Moderate | Long-Term | Direct | The cementitious grout and other concrete works during the construction phase, will avoid any contamination of ground through the use of appropriate design and methods implemented by the appointed contractor in accordance with the CEMP (WM, 2025c) and relevant industry standards. | Imperceptible |

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| Activity | Attribute | Predicted Effect | Quality | Significance | Duration | Type | Mitigation | Residual Effect |
|---|---|---|---|---|---|---|---|---|
| Accidental Release of Deleterious Materials (e.g., Fuels or Other Hazardous Materials Being Used Onsite) | Soils, Subsoils and Bedrock | Potential (albeit low) for uncontrolled release of deleterious materials including fuels and other materials being used on-site, through the failure of secondary and tertiary containment or a materials handling accident, to the land, soil, and geological environment. | Negative | Moderate to Significant | Long Term | Direct / Worst Case | Refueling of plant and storage of any deleterious materials including fuels will be undertaken in accordance with the requirements and procedures outlined in the CEMP. | Imperceptible |
| Stockpiling of Excavated Soil and Subsoils | Soil Structure | The temporary stockpiling of excavated soils will result in exposure of the materials to various elements including weather. | Negative | Slight | Long-term | Direct | The segregation and stockpiling of soil and stone at the site pending reuse or removal offsite will be carefully managed and maintained in order to minimise potential effect on soil quality. | Imperceptible |
| Import of Aggregates Onsite | Land, Soil and Geology | The Proposed Development will require the importation of aggregates for the construction of roads and utility infrastructure. The potential effects may include loss of attribute and changes in geological setting at the source site. | Neutral | Imperceptible | Permanent | Indirect | Only certified materials from authorised sources will be used. | Imperceptible |
| Accidental release of deleterious materials | Geological Heritage | There is a potential for runoff from a fuel spill to enter the recorded heritage site located adjacent to the | Negative | Moderate | Medium-term | Direct / Worst-case | There are no geological heritage sites located within the site of the Proposed Development and the construction | Imperceptible |

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| Activity | Attribute | Predicted Effect | Quality | Significance | Duration | Type | Mitigation | Residual Effect |
|---|---|---|---|---|---|---|---|---|
| | | northern boundary of the site. | | | | | works for the Proposed Development will occur outside the identified heritage sites. Regardless, refuelling of plant and storage of any deleterious materials including fuels will be undertaken in accordance with the requirements and procedures outlined in the CEMP (WM, 2025c). | |
| **Operational Phase** | | | | | | | | |
| There are no likely significant residual effects on the receiving land, soil, or geological environment during the operational phase. The predicted effects are considered to be imperceptible and not significant in the context of the EIA Directive. | | | | | | | | |

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## 6.8 Monitoring

### 6.8.1 Construction Phase

During the Construction Phase of the Proposed Development, the following monitoring measures will be implemented where appropriate:

- Routine inspections of construction activities will be carried out on a daily basis by the contractor staff to ensure all controls to prevent environmental effect, relevant to the construction activities taking place at the time, are in place. Environmental inspections will ensure that the works are undertaken in compliance with the CEMP (WM, 2025c) and that the requirements of the Conditions of Planning, the NIS and associated documentation are being adhered to during construction.
- Routine monitoring and inspections during refuelling and concrete works to ensure no adverse effects and compliance with avoidance, remedial and mitigation measures.
- Inspections and monitoring will be undertaken during excavations and other groundworks to ensure that measures that are protective of water quality are fully implemented and effective.
- The excavation and reuse of soil onsite will be subject to control procedures which will include soil quality testing to ensure suitability for onsite use in accordance with engineering and environmental specification for the Proposed Development that will be determined during the detailed design phase.
- Where the material is not suitable for re-use and considered a waste, additional sampling and assessment of soil and materials may be required to ensure that the materials are managed and removed offsite in accordance with waste management legislation. The waste classification of sample results will be based on the following method:
    - Soil sample collection and analysis in accordance with relevant industry standards including but not limited to:
        - EPA guidance document 'List of Waste & Determining if Waste is Hazardous or Non-hazardous and Waste Classification' (EPA, 2018); and
        - BS 10175:2011 Investigation of potentially contaminated sites - Code of practice (BSI, 2011).
    - Assessment of results to determine if the sample is a hazardous or non-hazardous waste and assigning a List of Waste (LoW) Code to the sampled material in accordance with EPA guidance 'Waste Classification – List of Waste & Determining if Waste is Hazardous or Non-Hazardous' (EPA, 2018).
    - The material will also be assessed to determine if the material meets the waste acceptance criteria for authorised landfills and soil recovery facilities as follows:
        - Screening the sample analytical results against the waste acceptance criteria (Landfill WAC) set out in the adopted EU Council Decision 2003/33/EC establishing criteria and procedures for the acceptance of waste at landfills pursuant to Article 16 and Annex II of Directive 1999/31/EC (2002); and
        - Screening the sample analytical results against the Maximum Concentrations and/or Soil Trigger Levels set out in the Environmental Protection Agency (2020) "Guidance on Waste Acceptance Criteria at Authorised Soil Recovery Facilities" (SRF WAC).

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- The appointed contractor will monitor excavations to ensure consistency with the descriptions and classifications according to waste acceptance criteria testing carried out as part of the site investigations which will be undertaken in advance of construction works commencing.
- A dust deposition monitoring programme will be implemented during the construction phase in order to verify the continued compliance with relevant standards and limits. Where required, the appointed contractor will undertake dust monitoring at a range of nearest sensitive receptors during the construction phase of the Proposed Development with the Technical Instructions on Air Quality Control (TA Luft) dust deposition limit set at 350 mg/m$^2$/day, averaged over one year and applied as a 30-day average.
- Materials management and waste audits will be carried out at regular intervals to monitor the following:
    - Management of soils onsite and for removal offsite.
    - Record keeping.
    - Traceability of all materials, surplus soil and other waste removed from the site.
    - Ensure records are maintained of material acceptance at the end destination.

### 6.8.2 Operational Phase

There are no monitoring requirements specifically in relation to land, soil and geology during the Operational Phase of the Proposed Development.

## 6.9 Interactions

### 6.9.1 Population and Human Health

An assessment of the potential effect of the Proposed Development on human health is included in Chapter 4 of this EIAR.

There is a potential risk of dust generated from excavation and stockpiling of soil during the construction phase of the Proposed Development posing a human health risk in the absence of standard avoidance and mitigation measures which will be implemented to be protective of human health.

Appropriate industry standards and health and safety legislative requirements will be implemented during the construction phase of the Proposed Development that will be protective of site workers.

### 6.9.2 Biodiversity

An assessment of the potential effects of the Proposed Development on the Biodiversity of the site, with emphasis on habitats, flora and fauna which may be effected as a result of the excavation and importation of materials to the site are included in Chapter 5 of this EIAR. It also provides an assessment of the effects of the Proposed Development on habitats and species, particularly those protected by national and international legislation or considered to be of particular conservation importance and proposes measures for the mitigation of these effects.

### 6.9.3 Hydrology and Hydrogeology

An assessment of the potential effect of the Proposed Development on the hydrological and hydrogeological environment is included in Chapter 7 of this EIAR.

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In the absence of avoidance, remedial, and mitigation measures, construction activities may potentially create pathways for potential sources of contamination to enter underlying groundwater. During the construction phase of the Proposed Development, groundwater vulnerability is expected to temporarily increase. Construction activities will involve the use of potentially hazardous materials such as cementitious materials, fuels, oils, and other substances. An uncontrolled release of these materials, whether through containment failure or handling accidents, could affect the surrounding environment. In addition, in the absence of avoidance, remedial and mitigation measures, there is a potential for sediment from excavated soils to enter water runoff and discharge into the Boyne Estuary via the Sheephouse 07 River which crosses a small area of the southeastern boundary of the site along Rathmullan Road receiving local drainage. Procedures for the protection of the receiving water environment are set out in Chapter 7 of this EIAR.

### 6.9.4 Air Quality and Climate

The excavation of soils across the site and the temporary stockpiling of soils pending reuse or removal offsite has the potential to generate nuisance effects (i.e., dust) during the construction phase of the Proposed Development. An assessment of the potential effect of the Proposed Development on air quality is included in Chapter 8 of this EIAR.

### 6.9.5 Landscape and Visual

During the construction phase and into the operational phase of the Proposed Development, the site landscape will undergo a change from undeveloped lands to residential use. An assessment of the potential effect of the Proposed Development on the receiving landscape is included in Chapter 11 of this EIAR.

### 6.9.6 Material Assets: Traffic, Transport, Utilities, Infrastructure and Waste

An assessment of the potential effect of the Proposed Development on the material assets (traffic and transport) and material assets (waste) are included in Chapter 13 and Chapter 14 of this EIAR, respectively.

Where possible, it is intended to retain and re-use the excavated soil and subsoil on the site for engineering fill and landscaping. However, where required, unsuitable soil and subsoil will be removed offsite in accordance with all statutory legislation.

There is also a requirement to import soil, subsoil and aggregate materials during the construction phase of the Proposed Development.

## 6.10 Difficulties Encountered When Compiling

No difficulties were encountered in the preparation of this chapter of the EIAR.

## 6.11 Conclusion

Overall, taking into account the avoidance, remedial, and mitigation measures outlined in Section 6.6, the residual effects associated with both the construction and operational phases of the Proposed Development are considered imperceptible in terms of their impact on the receiving environment (land, soil, and geology). These effects are deemed non-significant within the context of the EIA Directive. Furthermore, no soil-related constraints have been

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identified that would be expected to hinder or prevent the Proposed Development from proceeding as planned.

## 6.12 References

About Safety Ltd., 2019. Refurbishment and Demolition Survey for Asbestos Containing Materials. Derelict Farm Buildings, Rathmullan Road, Drogheda, Co. Louth.

Construction Industry Research and Information Association (2015) Environmental good practice on Site guide (CIRIA -C741).

Construction Industry Research and Information Association, 2001. Control of Water Pollution from Construction Sites. Guidance for Consultants and Contractors (CIRIA – C532).

DNV, 2025. Resource and Waste Management Plan.

Environmental Protection Agency, 2025. EPA Envision Maps. https://gis.epa.ie/EPAMaps/. Consulted in June 2025.

Environmental Protection Agency, 2020 (EPA, 2020). Guidance on Waste Acceptance Criteria at Authorised Soil Recovery Facilities.

Environmental Protection Agency, May 2022 (EPA, 2022). Guidelines on the information to be contained in Environmental Effect Assessment Reports.

Geological Society of Ireland, 2025. GSI web mapping. https://dcenr.maps.arcgis.com/apps/MapSeries/index.html?appid=a30af518e87a4c0ab2fbde2aaac3c228. Consulted in June 2025.

Google Earth Pro, 2025. Consulted in June 2025.

Institute of Geologists of Ireland Guidelines, 2002. Geology in Environmental Effect Statements, A Guide.

Institute of Geologists of Ireland - Guidelines for the Preparation of Soils, Geology and Hydrogeology Chapters of Environmental Effect Statements.

Meath County Council (MCC, 2025). Meath County Development Plan 2021-2027.

McElligott Consulting Engineers (2025) (McElligott, 2025). Energy, Utilities and Telecommunications Statement for Rathmullen LRD at Oldbridge, Drogheda, Co. Meath.

National Roads Authority, 2009. Guidelines on Procedures for the Assessment and Treatment of Geology, Hydrology and Hydrogeology for National Road Schemes.

Waterman Moylan Consulting Engineers, 2018 (WM, 2018). Report on a Site Investigation for a Housing Development at West Drogheda, County Meath for Clard Developments Ltd. Report No. 21345.

Waterman Moylan Consulting Engineers, 2025 (WM, 2025a). Engineering Assessment Report. Proposed Residential Development at Rathmullan, Drogheda, County Meath.

Waterman Moylan Consulting Engineers, 2025 (WM, 2025b). Construction Waste Management Plan Proposed Residential Development at Rathmullan, Drogheda, Co. Meath.

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Waterman Moylan Consulting Engineers, 2025 (WM, 2025c). Construction Environmental Management Plan Proposed Residential Development at Rathmullan, Drogheda, Co. Meath.

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# 7 HYDROLOGY AND HYDROGEOLOGY

## 7.1 Introduction

This chapter of the Environmental Impact Assessment Report (EIAR) provides a description of the hydrology and hydrogeology (water) environment within and immediately surrounding the site of the Proposed Development and an assessment of the potential effects of the Proposed Development on hydrology and hydrogeology and sets out any required mitigation measures where appropriate.

The principal objectives of this chapter are to identify:

- Hydrological and hydrogeological characteristics of the receiving environment at the site of the Proposed Development.
- Potential effects that the Proposed Development may have on the receiving water environment.
- Potential constraints that the environmental attributes may place on the Proposed Development.
- Required mitigation measures which may be necessary to minimise any adverse effects related to the Proposed Development.
- Evaluate the significance of any residual effects.

This chapter of the EIAR should be read in conjunction with Chapter 4 Population and Human Health, Chapter 5 Biodiversity, Chapter 6 Land and Soil, Chapter 8 Air Quality, Chapter 11 Landscape and Visual Effect and Chapter 14 Material Assets: Waste and Utilities of the EIAR and other information provided by the Applicant pertaining to the design proposals for the Proposed Development.

### 7.1.1 Quality Assurance and Competency of Experts

The chapter was prepared by Nuria Manzanas BSc, MSc, PGeo, a Principal Consultant of DNV with over 11 years' experience in contaminated land and hydrogeological assessments.

The chapter was reviewed by Gareth Carroll BA BEng MIEnvSc CEnv, a Principal Consultant of DNV. Gareth, a Chartered Environmentalist with the Institute of Environmental Sciences (CEnv) has over 12 years' experience in environmental assessment of brownfield and greenfield sites for a range of project types and geological and hydrogeological site settings and is professionally competent and accredited to undertake environmental impact assessments.

This chapter has been approved by Catherine Keogan, Technical Director and EIA Lead at DNV. Catherine is an environmental consultant with 37 years' experience in consultancy, specialising in EIAs for large-scale residential, commercial developments, pharmaceutical, BESS and solar projects working closely with a range of developers, planning consultants and architects within the public and private sector. Ms. Keogan has a B.Sc. (Hons) in Analytical Science and a Post Graduate Diploma in Renewable Energy Technology Systems.

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## 7.2 Study Methodology

### 7.2.1 Relevant Legislation & Guidance

The methodology adopted for the assessment has regard to the relevant guidelines and legislation including:

- Council Directive 2006/118/EEC, 2006. On the protection of groundwater against pollution and deterioration. European Parliament and the Council of European Communities.
- Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000 establishing a framework for Community action in the field of water policy with amendments 2455/2001/EC, 2008/32/EC and 2008/105/EC (Water Framework Directive (WFD)).
- European Commission, 2022. WFD Reporting Guidance 2022. Final Draft V4.
- Act No. 30/2007, Water Services Act 2007 as amended.
- Act No. 21/1990, Local Government (Water Pollution) (Amendment) Act, 1990 as amended.
- Act No. 1/1977, Local Government (Water Pollution) Act, 1977 as amended.
- S.I. No. 722/2003 – European Communities (Water Policy) Regulations 2003 as amended.
- S.I. No. 489/2011 – European Communities (Technical Specifications for the Chemical Analysis and Monitoring of Water Status) Regulations, 2011.
- S.I. No. 122/2010 – European Communities (Assessment and Management of Flood Risks) Regulations 2010 as amended.
- S.I. No. 272/2009 - European Communities Environmental Objectives (Surface Waters) Regulations 2009 as amended.
- S.I. No. 9 of 2010 - European Communities Environmental Objectives (Groundwater) Regulations 2010 as amended.
- Transport for Ireland (TII), 2009. Guidelines on Procedures for Assessment and Treatment of Geology, Hydrology and Hydrogeology for National Road Schemes.
- WFD Working Group, 2005. Guidance on the Assessment of the Effect of Groundwater Abstractions (WFD, 2005).
- Meath County Council, 2021. Meath County Development Plan 2021-2027.

The construction works will be managed in accordance with all statutory obligations and regulations and with standard international best practice. Other guidance used in the assessment of potential effects on the receiving water environment include:

- Construction Industry Research and Information Association, 2016. Groundwater Control: Design and Practice (CIRIA – C750).
- Construction Industry Research and Information Association, 2015. Environmental Good Practice on Site Guide (CIRIA – C741).
- CIRIA, 2007. The SuDS Manual (C697).
- CIRIA, 2006. Control of Water Pollution from Linear Construction Projects: Technical Guidance (C648).
- Construction Industry Research and Information Association, 2001. Control of Water Pollution from Construction Sites, Guidance for Consultants and Contractors (CIRIA – C532).

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- Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000 establishing a framework for Community action in the field of water policy
- Enterprise Ireland Oil Storage Guidelines (BPGCS005).
- Environmental Protection Agency (EPA), 2013. IPC Guidance Note on Storage and Transfer of Materials for Scheduled Activities.
- UK Environment Agency, 2004. UK Pollution Prevention Guidelines (PPG).
- Inland Fisheries Ireland (2016). Guidelines on Protection of Fisheries during Construction Works in and Adjacent to Waters.
- Department of the Environment, Heritage and Local Government, Environmental Protection Agency and Geological Survey of Ireland, 1999. Groundwater Protection Schemes (DEHLG/EPA/GSI, 1999).
- Department of the Environment, Heritage and Local Government, 2009. Appropriate Assessment of Plans and Projects in Ireland - Guidance for Planning Authorities (DEHLG, 2009).
- Department of Housing, Planning and Local Government, August 2018. Guidelines for Planning Authorities and An Bord Pleanála on carrying out Environmental Effect Assessment (DHPLG, 2018).
- Environmental Protection Agency, 2014. Guidance on the Authorisation of Direct Discharges to Groundwater.
- Environmental Protection Agency, 2013. Guidance on the Management of Contaminated Land and Groundwater at EPA Licensed Sites.
- Environmental Protection Agency, May 2022. Guidelines on the information to be contained in Environmental Effect Assessment Reports (EPA, 2022).
- Transport for Ireland (TII), 2008. Guidelines for the Crossing of Watercourses during the Construction of National Road Schemes.

### 7.2.2 Consultation

Pre-application consultation was held with Meath County Council (MCC), with a Section 247 pre-planning consultation meeting held on the 6th of November 2024 and a Section 32 LRD consultation meeting was held on the 5th of March 2025, to explain the project and present technical and environmental information. Summary details of this meeting are provided by Hughes Planning & Development Consultants in their enclosed Statement of Consistency and Planning Report.

### 7.2.3 Phased Approach

A phased approach was adopted for this EIAR in accordance with Environmental Protection Agency (EPA) and Institute of Geologists of Ireland (IGI) guidelines as set out above and is described in the following sections.

**Element 1:** An initial assessment and effect determination stage was carried out by DNV to establish the project location, type and scale of the Proposed Development, the baseline conditions, and the type of hydrological and hydrogeological environment, to establish the activities associated with the Proposed Development and to undertake an initial assessment and effect determination. This element of the assessment also included developing the Conceptual Site Model (CSM) for the site and the receiving environment. A CSM represents the characteristics of the site and identifies the possible relationship and potential risk between contaminant sources (i.e., characteristics of the proposed development), pathways (i.e.,

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transport route or means by which a receptor can be exposed to) and receptors (receiving environment). The term pollutant linkage is used to describe a particular combination of source-pathway-receptor (SPR). Each of these elements can exist independently, but they create a risk only where they are linked together so that a particular contaminant affects a particular receptor through a particular pathway (i.e., a pollutant linkage).

This stage of the assessment included a desktop study that comprised a review of published environmental information for the site. The study area, for the purposes of assessing the baseline conditions for this chapter of the EIAR, extends beyond the site boundaries to include a 2km radius of the Proposed Development site. Potential environmental receptors outside of this radius that are potentially hydraulically connected with the site were also considered. The extent of the wider study area was based on the IGI Guidelines (IGI, 2013) that recommend a minimum distance of 2km radius from the site. This broader area is necessary to identify and evaluate all potential receptors that could be affected by the Proposed Development, either directly or indirectly. The distinction between the application site and the study area is crucial. The site of the Proposed Development is the focal point of the Proposed Development, while the study area includes any potential hydrogeological / hydrological connections to sensitive receptors including habitats that might experience secondary effects.

The desk study involved collecting all the relevant data for the site and surrounding area including published information and details pertaining to the Proposed Development provided by the Applicant and the design team.

A site walkover survey to establish the environmental site setting and baseline conditions at the site of the Proposed Development relevant to the hydrological and hydrogeological environment was undertaken by DNV on 17th June 2025.

The Element 1 stage of the assessment was completed by DNV and included the review of the following sources of information:

- Environmental Protection Agency (EPA) webmapping (EPA, 2025).
- Geological Survey Ireland (GSI) Datasets Public Viewer and Groundwater webmapping (GSI, 2025).
- National Parks and Wildlife Services (NPWS) webmapping (NPWS, 2025).
- Ordnance Survey Ireland (OSI) webmapping (OSI, 2025).
- Water Framework Directive Ireland (WFD) webmapping (WFD, 2025).
- Teagasc webmapping (Teagasc, 2025).
- Office of Public Works (OPW) database on historic flooding and the Catchment Flood Risk Assessment and Management (CFRAM) maps (OPW, 2025).
- Information provided by the Applicant pertaining to the design proposals for the Proposed Development.

Other documents and reports reviewed as part of this assessment included the following:

- DNV 2025a, Hydrological and Hydrogeological Risk (HRA) Assessment Report.
- DNV 2025b, Water Framework Directive Assessment (WFD) Report.

The HRA (DNV, 2025a) and WFD (DNV, 2025b) are included in the EIAR Volume 3: Appendix 7.1 and 7.2, respectively.

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**Element 2:** Involves direct and indirect site investigation and studies stage where necessary to refine the CSM developed as part of Element 1 and evaluation of the potential effects associated with the Proposed Development.

Site investigations were undertaken at the site in 2018 (Waterman Moylan Consulting Engineers (WM)), Report on a Site Investigation for a Housing Development at West Drogheda, County Meath) and included the excavation of five (5 No.) trial pits, the installation of five (5 No.) boreholes, HD dynamic probes at five (5 No.) locations and BRE Digest 365 Percolation Tests at five (5 No.) locations. The results of the site investigation remains relevant to the geological evaluation of the site, because it provided direct subsurface data, such as trial pits, boreholes, dynamic probes, and percolation tests, that were used to identify and assess the existing ground conditions and geological environment at the site and refine the CSM. In addition, the findings of the site walkover, undertaken by DNV on the 17th June 2025, indicate that the condition of the site remains unchanged since the 2018 site investigation and therefore, the findings of the investigation (2018) remain valid. Furthermore, a Technical Note was prepared by Waterman Moylan (WM) on 28th August 2025, confirming that the site conditions observed during the 2018 Site Investigation remain unchanged. The note verifies that there have been no alterations to the site since the original investigation that would give rise to any change in ground conditions. It is acknowledged that the site investigation was conducted approximately seven years ago, and that the current planning application for a Large-Scale Residential Development is relying on its findings. However, given that the site has remained in agricultural use since 2018 and no changes have occurred that would affect the underlying ground conditions, the original report remains valid and can be relied upon.

The site investigation (2018) report, is included within the CEMP, submitted in Volume 3: Appendix 6.1 of this EIAR.

**Element 3:** Evaluation of Mitigation Measures, Residual Effects and Final Effect Assessment were based on the outcome of the information gathered in Element 1 and Element 2 of the assessment. Mitigation measures to address all identified adverse effects that were identified in Element 1 and Element 2 of the assessment were considered in relation to the Construction Phase and Operational Phase of the Proposed Development. These mitigation measures were then considered in the impact assessment to identify any residual effects.

**Element 4:** Completion of the Hydrology and Hydrogeology sections of the EIAR in this Chapter which includes all the associated figures and documents.

### 7.2.4 Description of Importance of the Receiving Environment

The Transport Infrastructure Ireland (TII) criteria for rating of the importance of hydrogeological features at the site as documented in the National Roads Authority Guidelines on Procedures for the Assessment and Treatment of Geology, Hydrology and Hydrogeology for National Road Schemes (NRA, 2009), are summarised in Table 7-1.

*Table 7-1. Criteria for Rating Site Importance of Hydrogeological Features*

| Importance | Criteria | Typical Example |
|---|---|---|
| Extremely High | Attribute has a high quality or value on an international scale. | Groundwater supports river, wetland or surface water body ecosystem protected by European Union (EU) legislation e.g., SAC or SPA status. |

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| Importance | Criteria | Typical Example |
|---|---|---|
| Very High | Attribute has a high quality or value on a regional or national scale. | Regionally Important Aquifer with multiple wellfields.<br>Groundwater supports river, wetland, or surface water body.<br>Ecosystem protected by national legislation – e.g., NHA status.<br>Regionally important potable water source supplying >2500 homes.<br>Inner source protection area for a regionally important water source.<br>Quality Class A (Biotic Index Q4, Q5).<br>Flood plain protecting more than 50 residential or commercial properties from flooding. |
| High | Attribute has a high quality or value on a local scale. | Regionally Important Aquifer.<br>Groundwater provides large proportion of baseflow to local rivers.<br>Locally important potable water source supplying >1000 homes.<br>Outer source protection area for regionally important water source.<br>Inner source protection area for locally important water source.<br>Quality Class B (Biotic Index Q3-4).<br>Flood plain protecting between 5 and 50 residential or commercial properties from flooding.<br>Locally important amenity site for wide range of leisure activities. |
| Medium | Attribute has a medium quality or value on a local scale. | Locally Important Aquifer.<br>Potable water source supplying >50 homes.<br>Outer source protection area for locally important water source.<br>Quality Class C (Biotic Index Q3, Q2- 3).<br>Flood plain protecting between 1 and 5 residential or commercial properties from flooding. |
| Low | Attribute has a low quality or value on a local scale. | Poor Bedrock Aquifer.<br>Potable water source supplying <50 homes.<br>Locally important amenity site for small range of leisure activities.<br>Local potable water source supplying <50 homes.<br>Quality Class D (Biotic Index Q2, Q1).<br>Flood plain protecting 1 residential or commercial property from flooding. |

### 7.2.5 Description and Assessment of Potential Effects

Effects will vary in quality from negative, to neutral or positive. The effects of effects will vary in significance on the receiving environment. Effects will also vary in duration. The terminology and methodology used for assessing the 'effect' significance and the corresponding 'effect' throughout this chapter are described in Table 7-2 in accordance with EPA, 2022 guidelines on the information to be contained in EIARs.

*Table 7-2. Criteria for Assessment of Potential Effects Terminology and Methodology*

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| Quality of Effects/Effects | Definition |
|---|---|
| Negative | A change which reduces the quality of the environment. |
| Neutral | No effects or effects that are imperceptible, within the normal bounds of variation or within the margin of forecasting error. |
| Positive | A change that improves the quality of the environment. |
| **Significance of Effects / Effects** | **Definition** |
| Imperceptible | An effect capable of measurement but without significant consequences. |
| Not Significant | An effect which causes noticeable changes in the character of the environment but without significant consequences. |
| Slight Effects | An effect which causes noticeable changes in the character of the environment without affecting its sensitivities. |
| Moderate Effects | An effect that alters the character of the environment in a manner that is consistent with existing and emerging baseline trends. |
| Significant Effects | An effect which, by its character, magnitude, duration, or intensity alters a sensitive aspect of the environment. |
| Very Significant | An effect which, by its character, magnitude, duration, or intensity significantly alters a sensitive aspect of the environment. |
| Profound Effects | An effect which obliterates sensitive characteristics. |
| **Extend and Context of Effects** | **Definition** |
| Extend | Describe the size of the area, the number of sites and the proportion of a population affected by an effect. |
| Context | Describe weather the extent, duration or frequency will conform or contrast with established (baseline) conditions. |
| **Probability of Effects** | **Definition** |
| Likely Effects | The effects that can reasonably be expected to occur because of the planned project if all mitigation measures are properly implemented. |
| Unlikely | The effects that can reasonably be expected not to occur because of the planned project if all mitigation measures are properly implemented. |
| **Duration of Effects / Effects** | **Definition** |
| Momentary | Effects lasting from seconds to minutes |
| Brief | Effects lasting less than a day |
| Temporary | Effects lasting one year or less |
| Short-term | Effects lasting one to seven years |
| Medium-term | Effects lasting seven to fifteen years |
| Long-term | Effects lasting fifteen to sixty years |
| Permanent | Effects lasting over sixty years |
| Reversible | Effects that can be undone, for example through remediation or restoration |
| **Types of Effects** | **Definition** |

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| | |
|---|---|
| Indirect Effects | Effects on the environment, which are not a direct result of the project, often produced away from the project site or because of a complex pathway |
| Cumulative Effects | he addition of many minor or insignificant effects, including effects of other projects, to create larger, more significant effects. |
| “Do-nothing” Effects | The environment as it would be in the future should the subject project not be carried out |
| “Worst-case” Effects | he effects arising from a project in the case where mitigation measures substantially fail. |
| Indeterminable Effects | When the full consequences of a change in the environment cannot be described. |
| Irreversible Effects | When the character, distinctiveness, diversity or reproductive capacity of an environment is permanently lost |
| Residual Effects | The degree of environmental change that will occur after the proposed mitigation measures have taken effect. |

Figure 7-1 identifies how comparing the character of the predicted effect to the sensitivity of the receiving environment can determine the significance of the effect.

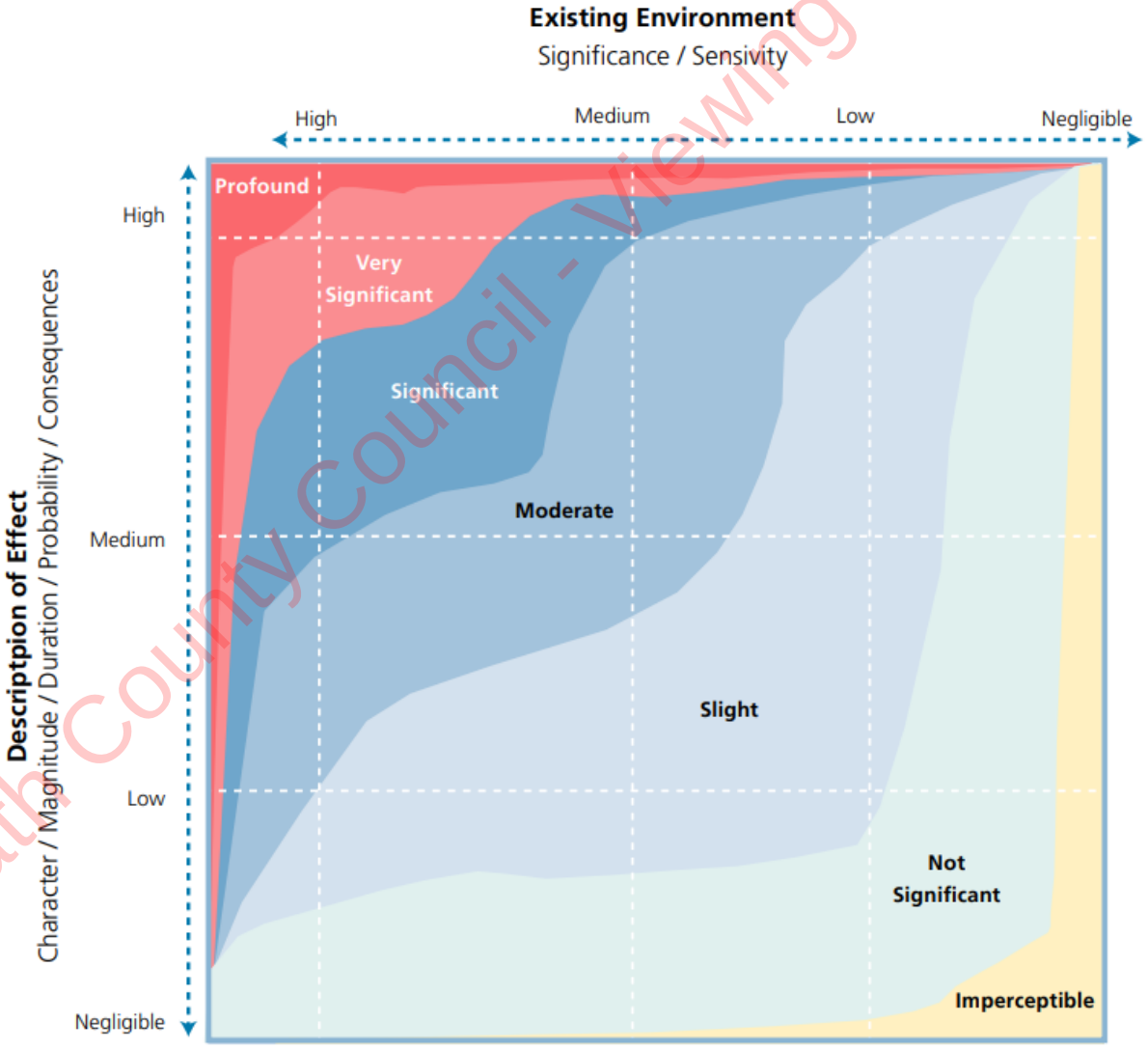



*Figure 7-1. Determining Significance*

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## 7.3 The Existing and Receiving Environment (Baseline Situation)

### 7.3.1 Site Location and Description

The site covers an area of 9.20 ha and is located adjacent to the Meath-Louth County boundary approximately 2.5km west of Drogheda Town Centre. The site is accessed by the Rathmullan road along the eastern boundary and is 40m south of the Boyne Estuary and 0.2km east of the M1 motorway.

A full description of the site location and surrounding land use is presented in Chapter 2 of this EIAR.

The site location is presented in Figure 7-2 and the current layout of the site is presented in Figure 7-3.

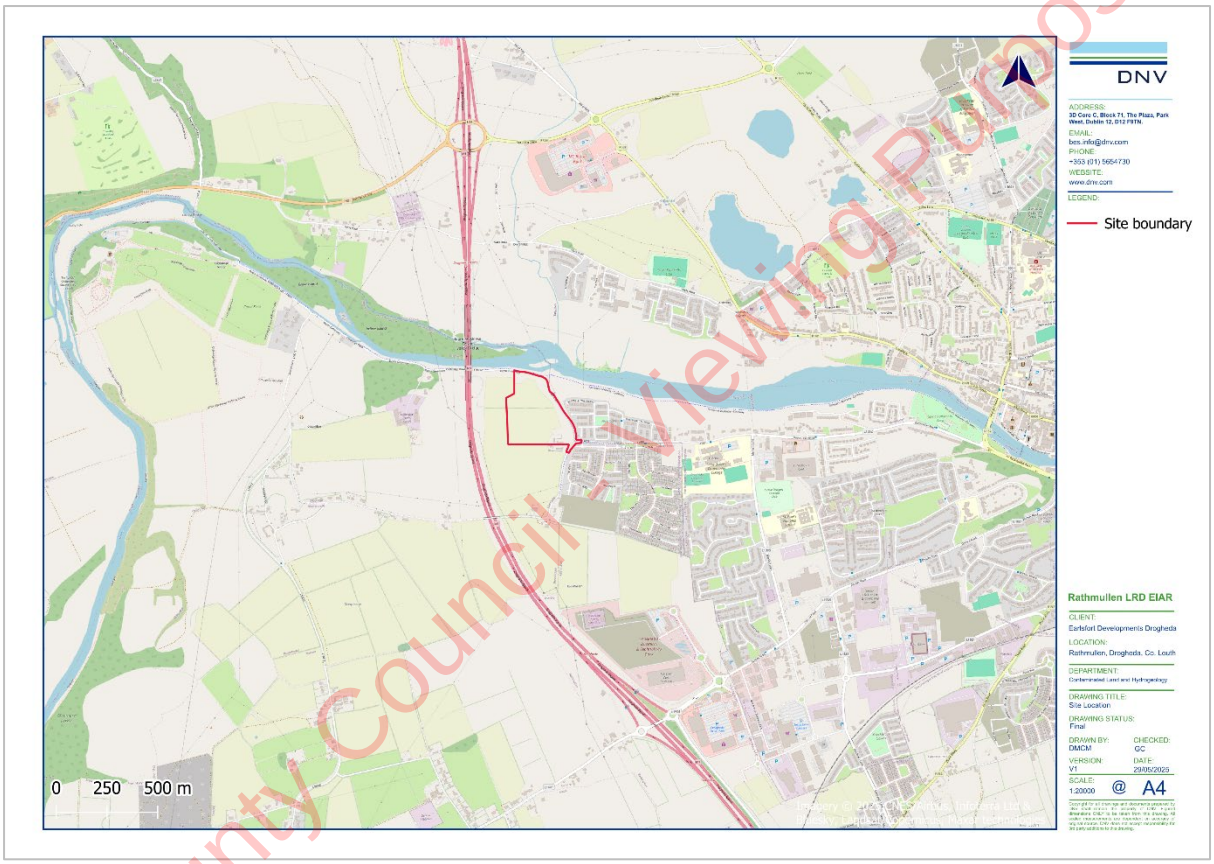



Figure 7-2. *Site Location*

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*Figure 7-3. Current Site Layout*

### 7.3.2 Topography

As documented in the Engineering Assessment Report (WM, 2025a) submitted with the planning application under separate cover, the site generally slopes from the southwest to the northeast towards the Boyne Estuary, with existing ground levels ranging from 30m above Ordnance Datum (mOD) to 6mOD within the site boundary.

### 7.3.3 Soil, Subsoil and Geology

The soils and geology at the subject site are described and assessed in Chapter 6 (Land and Soil) of this EIAR and are summarised as follows:

- The soils beneath the majority of the site are mapped by Teagasc (Teagasc, 2025) as deep well drained mineral (mainly acidic), Acid Brown Earths, Brown Podzolics (IFS Soil Code: AminDW) derived from mainly non-calcareous parent materials described as till derived chiefly from Lower Palaeozoic rocks (sandstone and shale till – TLPSsS). A small area of the eastern portion of the site is mapped as shallow well drained mineral (mainly basic), Renzinas, Lithosols (IFS Soil Code: BminSW) derived from mainly calcareous parent materials described as bedrock at surface - calcareous – RckCa).
- The subsoil or quaternary sediments beneath the majority of the site are mapped by the GSI (GSI, 2025) as till derived from Lower Palaeozoic sandstones and shales (TLPSsS). A small area within the southeastern corner of the site is classified as a Kartsified bedrock outcrop or subcrop (KaRck).

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- The bedrock beneath the site is mapped by the GSI (GSI, 2025) as the Platin Formation (Code: CDPLTN) described as coarse greywacke & shale.
- There are five karst features mapped by the GSI (GSI, 2025) within a 2km radius of the site.
    - Enclosed Depression (IE_GSI_Karst_40K_1635) – located approximately 1.82km northeast of the site.
    - Spring (IE_GSI_Karst_40K_3873) - located approximately 1.51km north of the site.
    - Swallow Hole (IE_GSI_Karst_40K_2950) - located approximately 1.6km north of the site.
    - Superficial Solution Feature (IE_GSI_Karst_40K_3874) - located approximately 1.63km north of the site.
    - Swallow Hole (IE_GSI_Karst_40K_8042) - located approximately 1.63km north of the site.

A description of the soil and geology encountered during the intrusive site investigation undertaken at the site (WM, 2025) is discussed in Chapter 6 of this EIAR.

### 7.3.4 Rainfall

Monthly rainfall data available for 1km x 1km grids (for the period 1991 to 2020), the most up to date long term rainfall dataset, was sourced from Met Éireann (Met Éireann, 2025) and is presented in Table 7-3.

*Table 7-3. Long Term Mean Monthly Rainfall Data (mm)*

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sept | Oct | Nov | Dec | Annual |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 73.1 | 59.9 | 58 | 58.2 | 60.7 | 66.5 | 66.9 | 74.4 | 66 | 85.9 | 88.2 | 80.1 | 837.9 |
| Note: 1km x 1km Irish Grid Coordinated selected for the Site =X (Easting): 306000, Y (Northing): 275000 | | | | | | | | | | | | |

The closest synoptic meteorological station to the site for Average Potential Evapotranspiration is at Dunsanny which is located approximately 32km south-west of the site and Proposed Development. It is noted that the climate chapter of the EIAR makes reference to the Dublin Airport meteorological station as it relates specifically to both climate and weather monitoring stations with 30 year averages across Ireland. The average potential evapotranspiration (PE) from the Dunsanny Station for the period 2022 to 2024 (Met Éireann, 2025) is presented in Table 7-4.

*Table 7-4. Average Potential Evapotranspiration (mm)*

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sept | Oct | Nov | Dec | Annual |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 11.3 | 18.7 | 35.9 | 52.4 | 79.2 | 87.3 | 82.1 | 77.6 | 45.7 | 27 | 12.1 | 10 | 539.3 |

### 7.3.5 Hydrogeology

#### *7.3.5.1 Site Hydrogeology and Groundwater Levels*

As documented in the site investigation report (WM, 2018), groundwater was not encountered during borehole drilling or the excavation of the trial pits which extended to depths ranging from 1.6m below ground level (mbGL) to 8.5mbGL.

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#### *7.3.5.2 Groundwater Body and Flow Regimes*

The bedrock aquifer beneath the site is within the Drogheda Groundwater Body (GWB) (EU Code: IE_EA_G_025).

The Drogheda GWB Report (GSI, 2025) identifies the main recharge mechanism for the aquifer as by point and diffuse recharge. Groundwater and surface water are more directly linked at certain karst features such as springs and swallow holes. Rainwater can enter the aquifer directly at enclosed depressions or at swallow holes. Diffuse recharge will be limited depending on the thickness and permeability of the subsoils overlying the aquifer which may reduce the amount of water reaching the water table. Groundwater will discharge from the aquifer directly to the coast and to rivers in the area as baseflow or as springs in the vicinity of rivers.

Groundwater flow in the aquifer is expected to be from the main recharge areas (i.e. the areas of thin subsoil) predominantly in the west and north towards the discharge areas (i.e. River Boyne and the coast) along fractures, joints and major faults. The majority of the groundwater flow is likely to occur in the upper 30m, within the weathered zone of a few metres and a connected fractured zone below this. However, deep water strikes in more isolated faults/ fractures can be encountered down to at least 50m. Flow path lengths can be between 500m and 2000m. The nature of groundwater flow will depend on the degree of karstification of the bedrock (i.e., limestone). Groundwater flow paths of up to a couple of kilometres can be expected.

As mentioned in Section 7.3.5.1, groundwater was not encountered during the site investigations undertaken at the site (WM, 2018). Based on the topography of the site and the presence of local rivers (i.e., Sheephouse_07 observed to be present as a dry ditch during the site walkover undertaken by DNV), it is considered that groundwater flow is likely to the northeast toward the Boyne Estuary.

#### *7.3.5.3 Aquifer Classification*

The GSI provides a methodology for aquifer classification based on resource value (regionally important, locally important and poor) and vulnerability (extreme, high, moderate or low). Resource value refers to the scale and production potential of the aquifer whilst vulnerability refers to the ease with which groundwater may be contaminated by human activities (vulnerability classification primarily based on the permeability and thickness of subsoils).

The bedrock aquifer within the Platin Formation (Code: CDPLTN) beneath the site is classified by the GSI (GSI, 2025) as a Regionally Important Aquifer - Karstified (diffuse) (Rkd).

Regionally important aquifers are capable of supplying regionally important abstractions (e.g. large public water supplies), or ‘excellent’ yields (>400 m3/d). ‘Karstification’ is the process whereby limestone is slowly dissolved away by percolating waters. Karstification frequently results in the uneven distribution of permeability through the rock, and the development of distinctive karst landforms at the surface (e.g. swallow holes, caves, dry valleys), some of which provide direct access for recharge/surface water to enter the aquifer.

It is noted that there are no gravel aquifers mapped by the GSI (GSI, 2025 at the site or within a 2km radius of the site (GSI, 2025). The closest sand and gravel aquifer recorded on the GSI mapping is the Littlegrange aquifer which is a Locally important gravel aquifer (Lg) located approximately 2.05km west of the site (GSI, 2025).

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The bedrock aquifer map is presented in Figure 7-4.

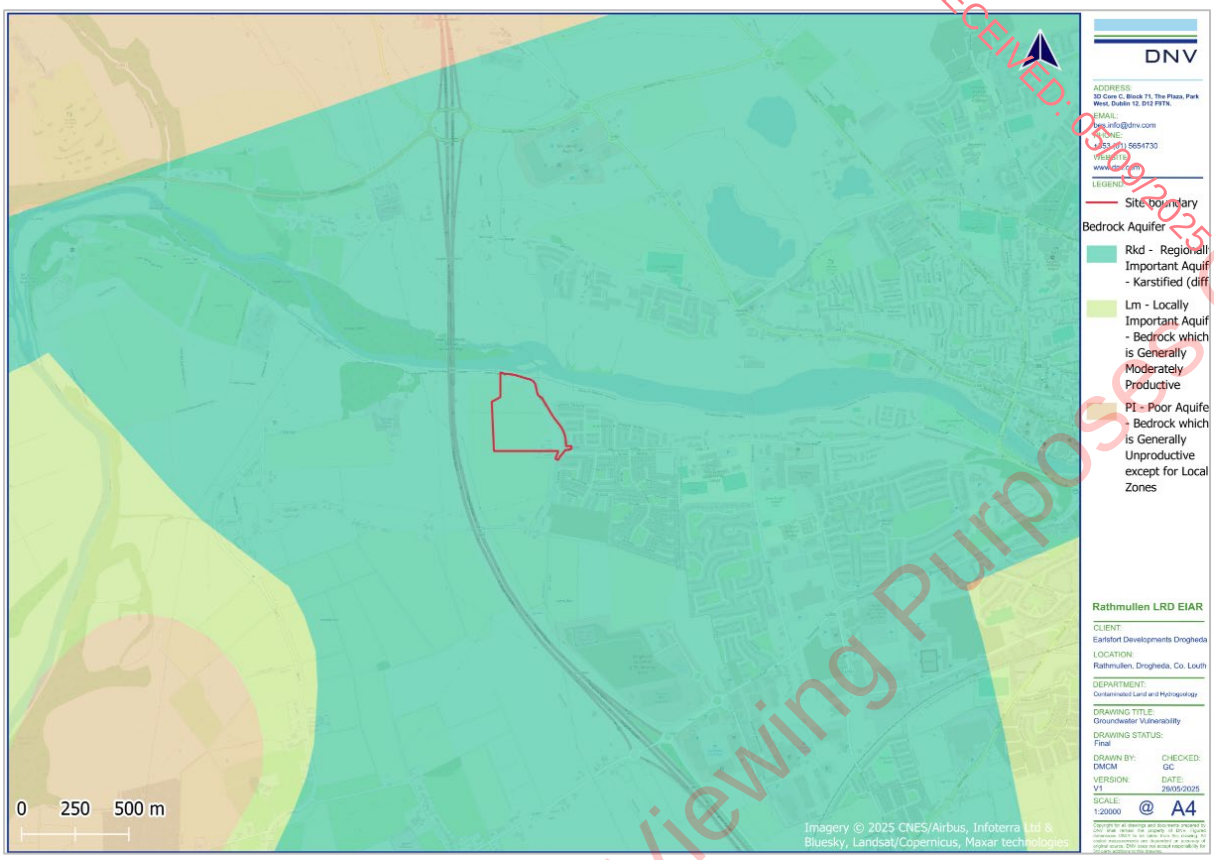



*Figure 7-4. Aquifer Classification*

### *7.3.5.4 Groundwater Vulnerability*

The vulnerability categories, and methods for determination, are presented in the Groundwater Protection Schemes publication (DEHLG/EPA/GSI, 1999) and summarised in Table 7-5. The publications state that as all groundwater is hydrologically connected to the land surface, it is the effectiveness of this connection that determines the relative vulnerability to contamination. Groundwater that readily and quickly receives water (and contaminants) from the land surface is considered to be more vulnerable than groundwater that receives water (and contaminants) more slowly and in lower quantities. The travel time, attenuation capacity and quantity of contaminants are a function of the following natural geological and hydrogeological attributes of any area.

*Table 7-5. Vulnerability Mapping Criteria (DEHLG/EPA/GSO, 1999)*

| Subsoil Thickness | Hydrogeological Requirements | | | | |
|---|---|---|---|---|---|
| | Diffuse Recharge | | | Point Recharge | Unsaturated Zone |
| | Subsoil Permeability and Type | | | (Swallow Holes, Losing Streams) | (Sand and Gravel Aquifers Only) |
| | High Permeability (Sand and Gravel) | Moderate Permeability (Sandy Subsoil) | Low Permeability (Clayey Subsoil, Clay, Peat) | | |
| 0-3m | Extreme | Extreme | Extreme | Extreme (30m radius) | Extreme |

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| Subsoil Thickness | Hydrogeological Requirements | | | | |
|---|---|---|---|---|---|
| | Diffuse Recharge | | | Point Recharge | Unsaturated Zone |
| | Subsoil Permeability and Type | | | (Swallow Holes, Losing Streams) | (Sand and Gravel Aquifers Only) |
| | High Permeability (Sand and Gravel) | Moderate Permeability (Sandy Subsoil) | Low Permeability (Clayey Subsoil, Clay, Peat) | | |
| 3-5m | High | High | High | N/A | High |
| 5-10m | High | High | Moderate | N/A | High |
| >10m | High | Moderate | Low | N/A | High |
| Notes: (i) N/A = not applicable (ii) Permeability classifications relate to the material characteristics as described by the subsoil description and classification method. | | | | | |

The GSI has assigned a groundwater vulnerability rating ranging from 'Moderate' (M) to 'High' (H) for the bedrock aquifer beneath the southwestern part of the site and 'Extreme' (E) and 'Rock at or near Surface or Karst' (X) for the bedrock aquifer beneath the east / southeast portion of the site. Therefore, the anticipated depth to bedrock based on the groundwater vulnerability rating and low permeability subsoils beneath the site is between 0.0mbGL and 10.0mbGL. It is noted that bedrock was not encountered during the site investigations (WM, 2018) in which the total depth of the wells extended to a maximum depth of 8.5mbGL.

The groundwater vulnerability map is presented in Figure 7-5.

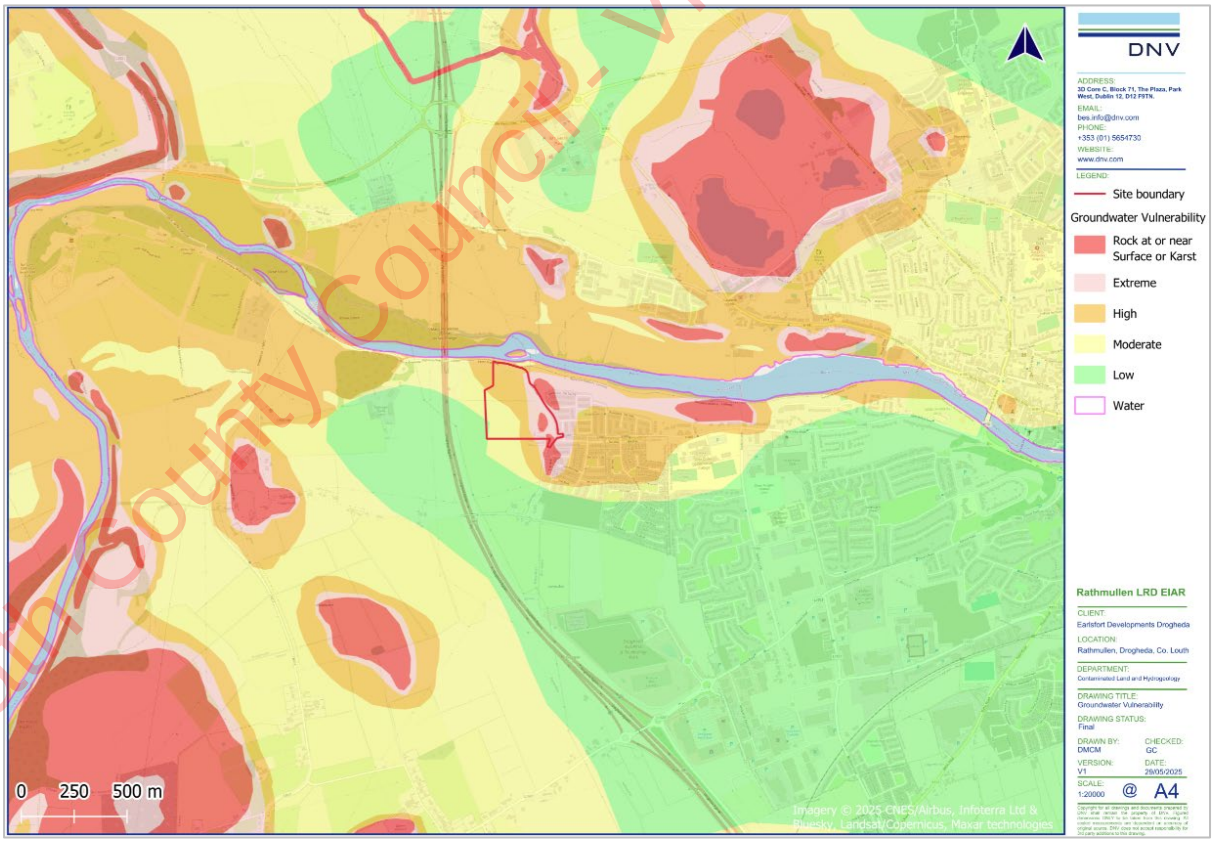



*Figure 7-5. Groundwater Vulnerability*

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### 7.3.6 Hydrology

#### *7.3.6.1 Catchment and Surface Water Features*

The Proposed Development site lies within the Boyne Catchment (Hydrometric Area 07) and Boyne_SC_130 sub-catchment (ID 07_17) (EPA, 2025). The site has been mapped by the EPA (EPA, 2025) to be within the Stagrennan_010 WFD River Sub-basin (IE_EA_07S320550).

The closest surface water features recorded on the EPA database (EPA, 2025) to the site is the Sheephouse 07 River (WFD Name: Stagrennan_010; River Waterbody Code: IE_EA_07S320550) which crosses a small area of the southeastern boundary of the site along Rathmullan Road. The Sheephouse 07 River flows north before discharging into the Boyne Estuary approximately 33m north of the site at its closest point. As documented in the SSFRA (JBA, 2025), prior to the construction of the M1 motorway, this ditch formed the lower reach of a watercourse originating to the southwest of the site. However, significant cutting required to accommodate the M1 has disconnected the lower section from its catchment upstream of the M1 motorway. Flows from the upper catchment of the former watercourse are now incorporated into the surface water drainage network of the M1 and do not continue to flow into the disused ditch, which is no longer considered to be a functional fluvial watercourse (JBA, 2025). The ditch is culverted along the eastern perimeter of the site and conveys local drainage flows in the surrounding area including lands upstream of the site to the east of the M1 motorway. This culvert outfalls to a ditch on the opposite side of the Rathmullan Road approximately 120m to the north of the proposed outfall location. The ditch travels northwards for approximately 60m before outfalling into the Boyne Estuary, which is tidal at this location.

Other surface water features within the vicinity of the site and Proposed Development are summarised as follows:

- The Mell River (WFD Name: Tullyeskar_010; River Waterbody Code: IE_EA_07T270880) is located approximately 128m north of the site, which runs in a southerly direction before discharging into the Boyne Estuary.
- The Rathmullan River (WFD Name: Tullyeskar_010; River Waterbody Code: IE_EA_07T270880) is located approximately 124m north of the site, which runs in a southerly direction before discharging into the Boyne Estuary.
- The Boyne Estuary Transitional Waterbody (WFD Name: Boyne Estuary; Transitional Waterbody Code: IE_EA_010_0100) is adjacent to the northern boundary of the site and it is fed by multiple rivers downstream of the site (i.e., >2km downstream of the site). This waterbody runs in an easterly direction before discharging into the Boyne Estuary Plume Zone Coastal Waterbody (Coastal Waterbody Code: IE_EA_010_0000) approximately 9.1km east of the site.

The following Coastal Waterbodies are indirectly connected to the site due to the connection to the Boyne Estuary Plume Zone Coastal Waterbody:

- Louth Coast (HA 06) (Coastal Waterbody Code: IE_NB_025_0000) – upstream of the Boyne Estuary Plume Zone Coastal Waterbody.
- Northwestern Irish Sea (HA 08) (Coastal Waterbody Code:IE_EA_020_0000) - downstream of the Boyne Estuary Plume Zone Coastal Waterbody.

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The surface water features mapped by the EPA (EPA, 2025) within a 2km radius of the site are presented in Figure 7-6.

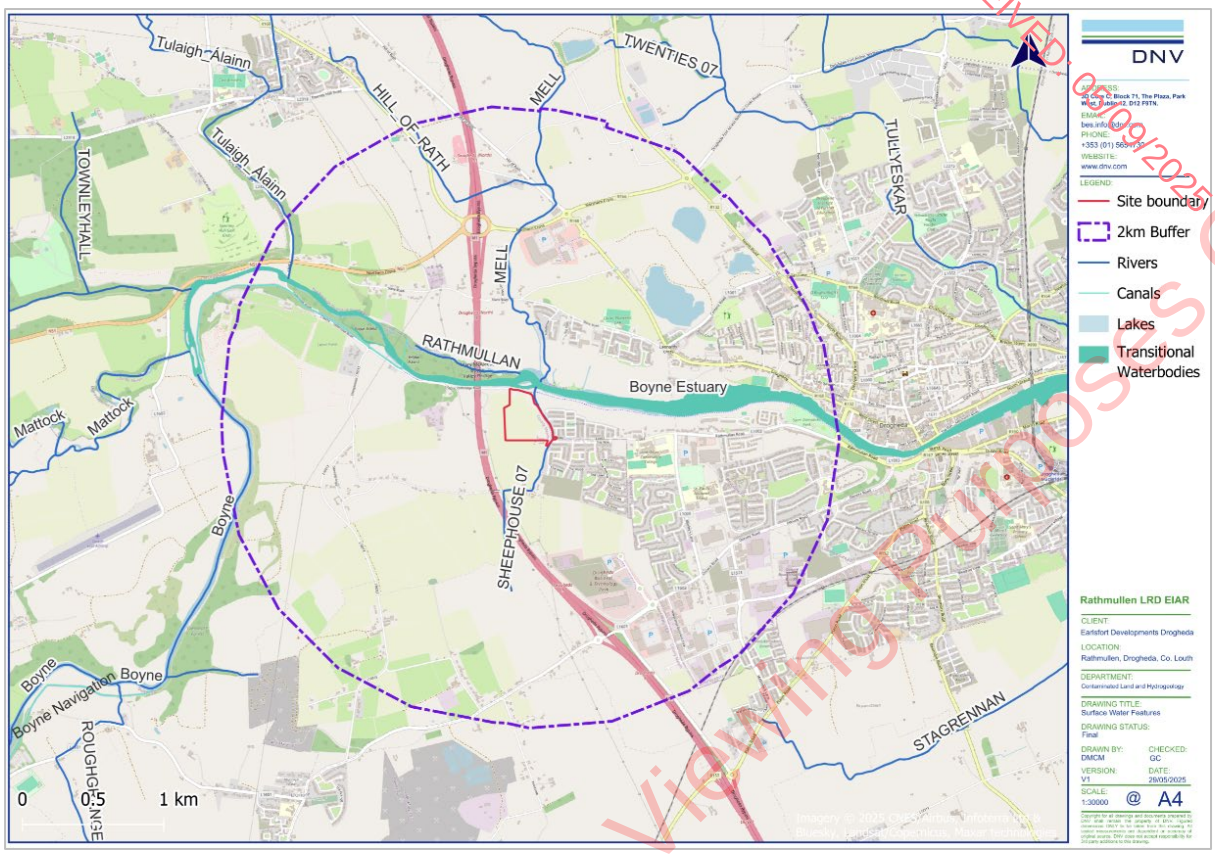



*Figure 7-6: Surface Water Features within a 2km Radius of the Site*

#### *7.3.6.2 Existing Drainage Infrastructure*

As documented in the Engineering Assessment Report (WM, 2025a), there is no surface water or foul water drainage within the site of the Proposed Development. However, there is an existing foul water drainage network at the junction of Rathmullan Road and Marley's Lane. Foul drainage from the Proposed Development will be pumped via the proposed pumping station to this existing foul water drainage network (refer to Section 7.5.2 for further details).

### 7.3.7 Flood Risk

A site-specific flood risk assessment (SSFRA) was prepared for the site and Proposed Development by JBA Consulting (JBA, 2025). It assessed the potential flood risk associated with fluvial, groundwater, coastal and pluvial flooding.

The primary source of flood risk to the site was fluvial flooding as represented in the Eastern CFRAM Study. However, following the construction of the M1 motorway and the site visit undertaken by JBA Consulting on 5th August 2025, it was confirmed that the former watercourse (Sheephouse_07 Stream), running in a south-north direction, had been disconnected by the M1 Motorway, observed by the presence of piped culverts diverting surface water flows into the M1 surface water drainage network. The culverted system then flows parallel to the road surface and discharges directly into the River Boyne. The former watercourse adjacent to the site now exists as a dry ditch unable to convey flow and no longer serves as a functional watercourse. In addition, it does not appear to have any active hydraulic

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connectivity with lands to the south of the site. Therefore, the Eastern CFRAMs mapping does not accurately represent the current conditions of the site and associated fluvial flood risk. '*Upon detailed review of all available fluvial flood information and surface water drainage construction drawings of the M1 Motorway, it is determined within this report that fluvial flood risk from the former Sheephouse watercourse is no longer present, as there is no watercourse remaining which could be the source of flooding to the site'* (JBA Consulting, 2025).

The report (JBA Consulting, 2025) concludes the following:

*'A portion of the site is currently incorrectly classified as Flood Zone A/B, due to the outdated catchment conditions represented within the Eastern CFRAMs flood modelling and mapping.'*

*'Due to the outdated catchment conditions represented within the Eastern CFRAMs flood modelling and mapping incorrectly identifying fluvial flood risk to the site, it is the finding of this site-specific flood risk assessment that the Flood Zones for the site are not appropriate and the entire site should be redefined as Flood Zone C. The Planning System and Flood Risk Management Guidelines for Planning Authorities, classes residential development as a highly vulnerable land use and is therefore appropriate for development only within Flood Zone C without the need to provide a Justification Test. This FRA confirms the proposed development footprint within the subject site as being located wholly within Flood Zone C and is therefore appropriate for residential development.'*

Although the Proposed Development footprint is located within Flood Zone C, mitigation measures have been considered and included, where necessary, to mitigate the risk of pluvial flooding to and from the site (JBA Consulting, 2025).

### 7.3.8 Water Supply and Drinking Water Source Protection

As documented in the HRA (DNV, 2025a) included in the EIAR Volume 3: Appendix 7.1, the GSI groundwater wells and springs database (GSI, 2025) was utilised to identify registered wells and groundwater sources in the surrounding area. There are 33 groundwater sources recorded within a 2km radius of the site. Refer to Figure 7-7 below.

- 23 wells were part of the N51 and M1 road developments – source: Meath County Council.
- Two recorded wells of industrial use.
- Seven recorded wells of unknown use.
- One recorded well of domestic use.

The site is located within an area served by mains water supply. As documented in the Engineering Assessment Report (WM, 2025a), there are no existing watermains present within the site boundary. However, there is an existing 150mm HPPE watermain on Rathmullan Road to the east of the site. Water supply for Proposed Development will be connected to the existing 150mm watermain which is to be upgraded (refer to Section 7.5.2 for further details).

There are three Groundwater Source Protection Areas (SPAs) mapped by the GSI (GSI, 2025) within a 2km radius of the site and one Group Water Scheme Preliminary Source Protection Area Zone of Contribution.

- Ballymakenny GWS (Ground Water Supply) – the Inner Protection Area (SI) is located approximately 1.82km northeast of the site.

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- Kiltrough PWS (Public Water Supply) - the Outer Protection Area (SO) is located approximately 1.62km southeast of the site.
- Drybridge PWS (Public Water Supply) - the Inner Protection Area (SI) is located approximately 0.6km north of the site.
- Drybridge Water Scheme - located approximately 1.84km north of the site.

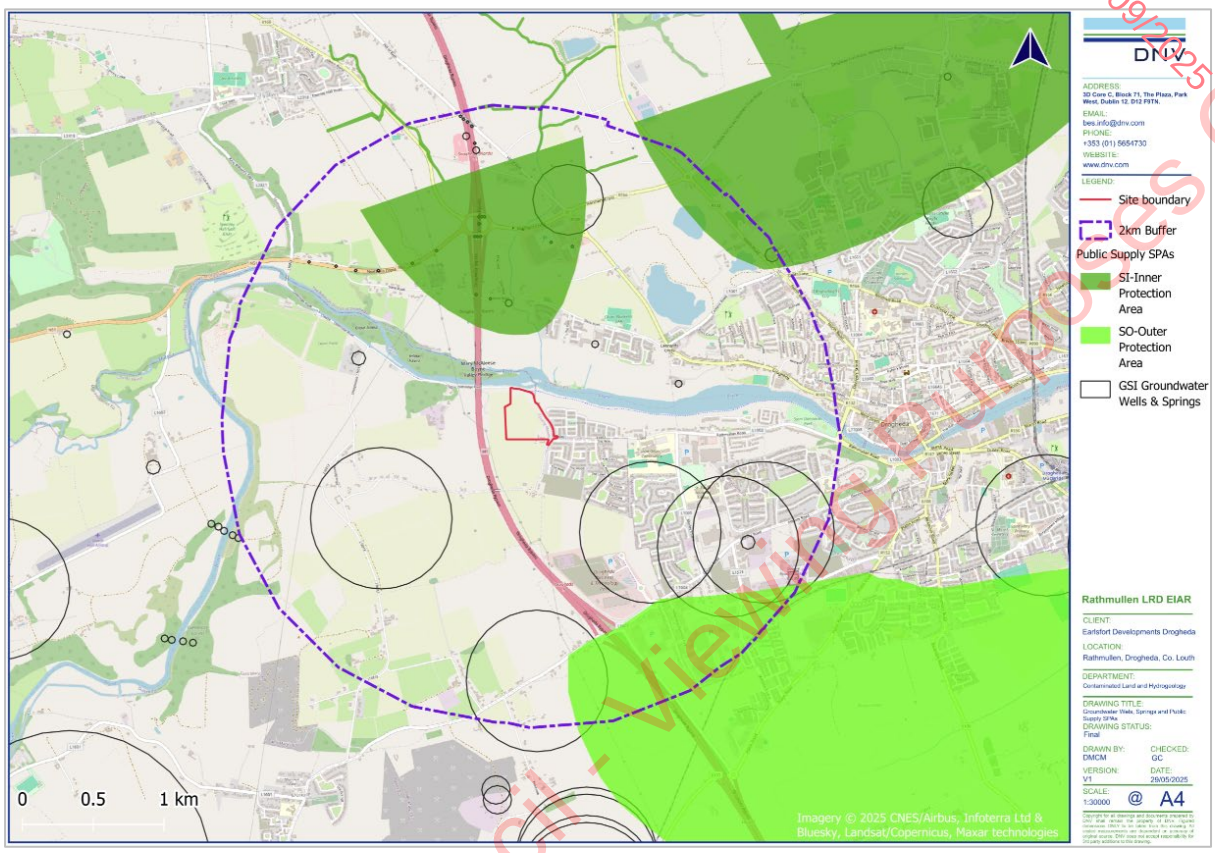



*Figure 7-7. Groundwater Wells, Springs and Public Supply SPA's*

### 7.3.9 Water Quality Data

#### *7.3.9.1 Published Regional Surface Water Quality*

The EPA surface water quality monitoring database (EPA, 2025) was consulted. A summary of the most recent published EPA water quality monitoring data (EPA, 2025) for waterbodies which have a potential hydraulic connection to the site is presented in Table 7-6.

*Table 7-6. Surface Water Quality*

| Waterbody I.D. (Location) | EPA WFD Parameter Quality & Trend Analysis | | | | |
|---|---|---|---|---|---|
| | Parameter | Period | Indicative Quality | Trend | Baseline Conc. (2020) (mg/l) |
| Stagrennan_010 | No data available | | | | |
| Tullyeskar_010 | No data available | | | | |

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| Waterbody I.D. (Location) | EPA WFD Parameter Quality & Trend Analysis | | | | |
|---|---|---|---|---|---|
| | Parameter | Period | Indicative Quality | Trend | Baseline Conc. (2020) (mg/l) |
| Boyne Estuary (Transitional Waterbody) | Chlorophyll | Summer | High | None | 3.500mg/m$^3$ |
| | | Winter | High | Upwards | 3.400mg/m$^3$ |
| | Dissolved Inorganic Nitrogen (as N) | Summer | Good | Upwards | 0.675 |
| | | Winter | Bad | Upwards | 3.214 |
| | Ortho-Phosphate (as P) - unspecified | Summer | High | Downwards | 18.500 |
| | | Winter | Good | Upwards | 37.000 |
| Boyne Estuary Plume Zone (Coastal Waterbody) | Dissolved Inorganic Nitrogen (as N) | Summer | High | Downwards | 0.031 |
| | Ortho-Phosphate (as P) - unspecified | Summer | High | Downwards | 5.350 |
| Louth Coast (HA 06) | Dissolved Inorganic Nitrogen (as N) | Summer | High | Downwards | 0.026 |
| | Ortho-Phosphate (as P) - unspecified | Summer | High | Upwards | 6.750 |
| Northwestern Irish Sea (HA 08) | Chlorophyll | Winter | High | Downwards | 1.800mg/m$^3$ |
| | | Summer | High | Downwards | 1.900mg/m$^3$ |
| | Dissolved Inorganic Nitrogen (as N) | Winter | High | Upwards | 0.199 |
| | | Summer | High | Upwards | 0.033 |
| | Dissolved Inorganic Nitrogen (as N) | Winter | High | Downwards | 17.500 |
| | | Summer | High | Downwards | 5.000 |

#### *7.3.9.2 Published Regional Groundwater Quality*

The EPA groundwater monitoring data (EPA, 2025) was reviewed to locate the closest groundwater quality monitoring stations within the close vicinity of the site. The closest groundwater station is the Drybridge station (Station ID: GWIE_EA_G_02521000005) located approximately 0.5km north of the site and the Ballymakenny station (Station ID: GWIE_EA_G_02521000002) located approximately 3.3km northeast of the site. The recorded groundwater quality data for the groundwater body beneath the site (Drogheda GWB) is presented in Table 7-7.

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*Table 7-7. Groundwater Quality*

| Groundwater Body | EPA WFD Parameter Quality & Trend Analysis | | | | |
|---|---|---|---|---|---|
| | Parameter | Period | Indicative Quality | Trend | Baseline Conc. (2018) (mg/l) |
| Drogheda GWB | Ammonia-Total (As N) - Drybridge | Annual | Good | Downwards | 0.021 |
| | Ammonia-Total (As N) - Ballymakenny | Annual | Good | None | 0.020 |
| | Chloride - Drybridge | Annual | Failing to achieve good status | Downwards | 42.481 |
| | Chloride - Ballymakenny | Annual | Good | Upwards | 23.308 |
| | Conductivity@25°C - Drybridge | Annual | Good | Upwards | 598.889 |
| | Conductivity@25°C - Ballymakenny | Annual | Good | Downwards | 559.750 |
| | Nitrate (as NO3) - Drybridge | Annual | Good | Upwards | 16.091 |
| | Nitrate (as NO3) - Ballymakenny | Annual | Good | Upwards | 5.455 |
| | ortho-Phosphate (as P) – unspecified - Drybridge | Annual | Good | Downwards | 0.029 |
| | ortho-Phosphate (as P) – unspecified - Ballymakenny | Annual | Good | Upwards | 0.031 |

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#### *7.3.9.3 Receiving Water Quality – Drogheda Wastewater Treatment Plant (WWTP)*

Foul water from the Proposed Development will be discharged via the Drogheda WWTP to the Boyne Estuary transitional waterbody (IE_EA_010_0100). The WWTP is operated under relevant statuary approvals. The most recent available Annual Environmental Report (AER) for the Drogheda WWTP is 2023 (Uisce Eireann (UE), 2023). The AER identified that the final

effluent was non-compliant with the Emission Limit Values (ELV) specified in the discharge license (D0041-01). The parameters falling to meet the ELVs included Ammonia-Total (as N) mg/l ortho-Phosphate (as P) - unspecified mg/l and Total Phosphorus (as P) mg/l. It was reported that the non-compliances were a result of 'inadequate operational procedures/training', 'WWTP upgrade required to meet ELVs' and 'WWTP not designed for phosphorus removal'.

While exceedances in the ELVs are recorded, the following is also noted under the significance of results section of the AER:

- *The coastal/transitional ambient monitoring results meet the required EQS. The EQS relates to the Oxygenation and Nutrient Conditions set out in the Surface Water Regulations 2009.*
- *Based on ambient monitoring results a deterioration in BOD, TON, Dissolved Oxygen, TSS and Ortho-P concentrations downstream of the effluent discharge is noted.*
- *A deterioration in water quality has been identified, however it is not known if it or is not caused by the WWTP.*
- *Agriculture & the Drogheda WWTP are cited as significant pressures effecting the Boyne Estuary transitional waterbody in the 3rd Cycle Draft Boyne Catchment Report (HA 07).*
- *Based on the effluent compliance results, the discharge from the wastewater treatment plant may be having an observable negative effect on the Water Framework Directive status downstream of the WWTP. It should be noted however that the current WFD status is Moderate both upstream and downstream of the WWTP.*
- *It is not considered that the discharge from the wastewater treatment plant is having an observable negative effect on any downstream bathing water areas.*

### 7.3.10 Water Framework Directive

The WFD status for river, lake, groundwater, transitional and/or coastal water bodies that have a potential hydraulic connection to the subject site as recorded by the EPA (EPA, 2025) in accordance with European Communities (Water Policy) Regulations 2003 (SI no. 722/2003) are provided in Table 7-8.

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*Table 7-8. Water Framework Directive Status*

| Waterbody Name | Waterbody EU Code | Location from Site | Distance Downstream of the Site (km) | WFD Status (2016-2021) | WFD Risk | Hydraulic Connection to the Site |
|---|---|---|---|---|---|---|
| **River Waterbodies** | | | | | | |
| Stagrennan_010 | IE_EA_07S320550 | South and east | 0.0 | Moderate | Review | None, culverted along eastern boundary of the site. Furthermore, no longer considered a functional watercourse (JBA, 2025) |
| Tullyeskar_010 | IE_EA_07T270880 | North and northeast | 124m and 128m | Moderate | Review | No identified hydraulic connection |
| **Transitional Waterbodies** | | | | | | |
| Boyne Estuary | IE_EA_010_0100 | Adjacent to the northern boundary of the site | 0.25 | Moderate | At Risk | Hydraulic connection via the site and the Drogheda WWTP discharge |
| **Coastal Waterbodies** | | | | | | |
| Boyne Estuary Plume Zone | IE_EA_010_0000 | East | 9.1 | Moderate | At Risk | Hydraulic connection via the Boyne Estuary and the Drogheda WWTP discharge |
| Louth Coast (HA 06) | IE_NB_025_0000 | Northeast | 9.2 | High (medium confidence) | Not at Risk | |
| Northwestern Irish Sea (HA 08) | IE_EA_020_0000 | Southeast | 9.5 | Good | At Risk | |
| **Groundwater Bodies** | | | | | | |
| Drogheda GWB | IE_EA_G_025 | Underlying | 0.0 | Good | At Risk | Yes, underlying the site |

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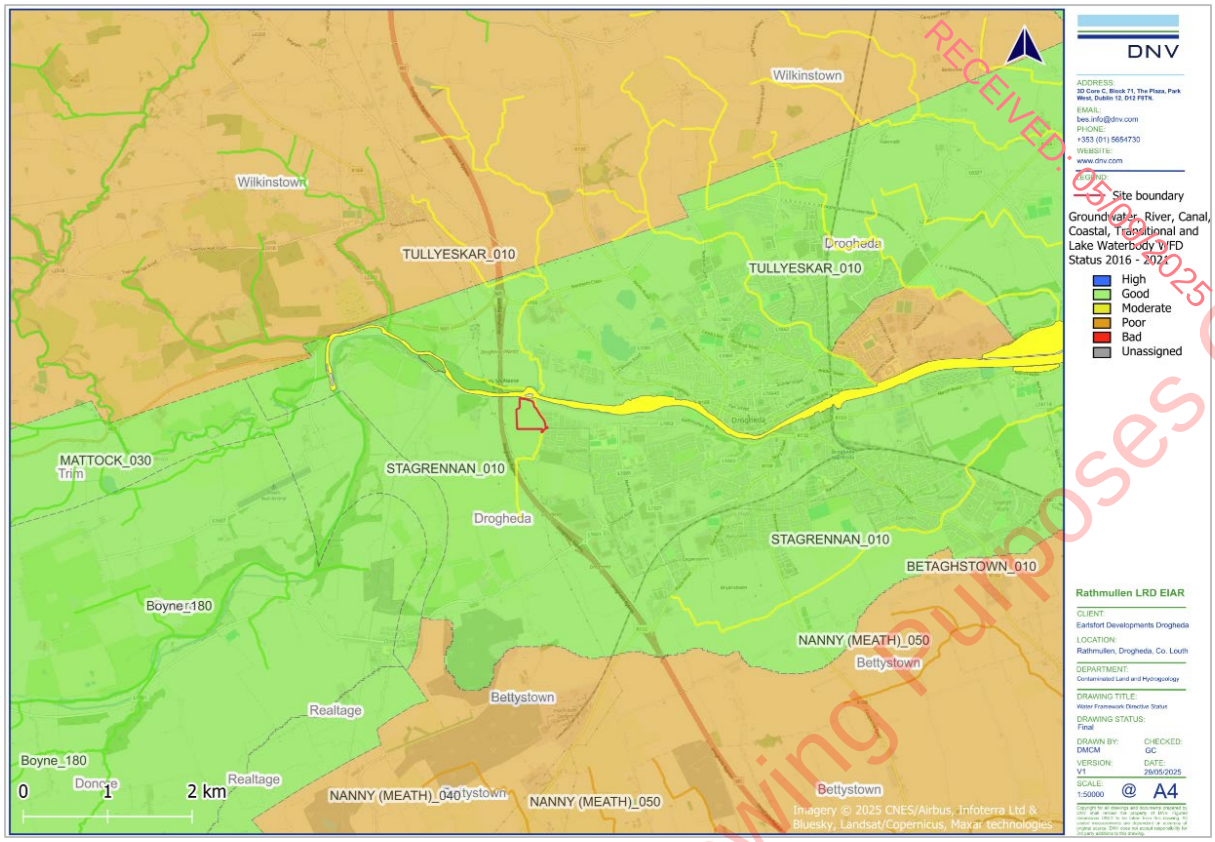



*Figure 7-8. Water Framework Directive Status (2016-2021)*

### *7.3.10.1 Nature Conservation*

The Habitats Directive (92/43/EEC) seeks to conserve natural habitats and wild fauna and flora by the designation of Special Areas of Conservation (SACs) and the Birds Directive (2009/147/EC) seeks to protect birds of special importance by the designation of Special Protection Areas (SPAs). SACs and SPAs are collectively known as Natura 2000 or European sites (referred to hereafter as Natura 2000 sites).

National Heritage Areas (NHAs) are designations under the Wildlife Acts to protect habitats, species, or geology of national importance. The boundaries of many of the NHAs in Ireland overlap with SAC and/or SPA sites. Although many NHA designations are not yet fully in force under this legislation (referred to as 'proposed NHAs' or pNHAs), they are offered protection in the meantime under planning policy which normally requires that planning authorities give recognition to their ecological value.

As documented in the HRA (DNV, 2025a) included in the EIAR Volume 3: Appendix 7.1, there are four Natura 2000 sites that are identified with a potential hydraulic connection to the site and Proposed Development. There are also two pNHAs identified with a potential hydraulic connection to the site and the Proposed Development. The Natura 2000 sites and other protected and designated sites or areas with a potential hydraulic connection to the site are summarised in Table 7-9.

Further details and assessment of the potential effects of the Proposed Development on habitats, flora and fauna are included in Chapter 5 of this EIAR.

*Table 7-9. Designated and Protected Sites*

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| Designated Site | Site Code | Distance from Site (km) | Direction | Potential Risk |
|---|---|---|---|---|
| **Special Area of Conservation (SAC)** | | | | |
| River Boyne and River Blackwater SAC | 002299 | 0.0 | Adjacent to the northern boundary of the site | Yes, downstream of the site and the Drogheda WWTP discharge. |
| Boyne Coast and Estuary SAC | 001957 | 5.57 | East / Northeast | |
| **Special Protection Area (SPA)** | | | | |
| Boyne Estuary SPA | 004080 | 4.4 | East / Northeast | Yes, downstream of the site and the Drogheda WWTP discharge. |
| North-West Irish Sea SPA | 004236 | 10.3 | East | Indirect, hydraulic connection via the Boyne Estuary SPA. |
| River Boyne and River Blackwater SPA | 004232 | 0.19 | West | Not connected to the site – upgradient of the site. |
| **Proposed Natural Heritage Area (pNHA)** | | | | |
| Boyne River Islands pNHA | 001862 | 0.0 | Adjacent to the northern boundary of the site | Yes, downstream of the site. |
| Boyne Coast and Estuary pNHA | 001957 | 5.57 | East / Northeast | Indirect, hydraulic connection via the Boyne Estuary. |
| Dowth Wetland pNHA | 001861 | 1.8 | West | Not connected to the site – upgradient of the site. |
| King William's Glenp NHA | 001804 | 1.7 | Northwest | |
| Note:<br>'*' = Distance is measured as closest point to the site | | | | |

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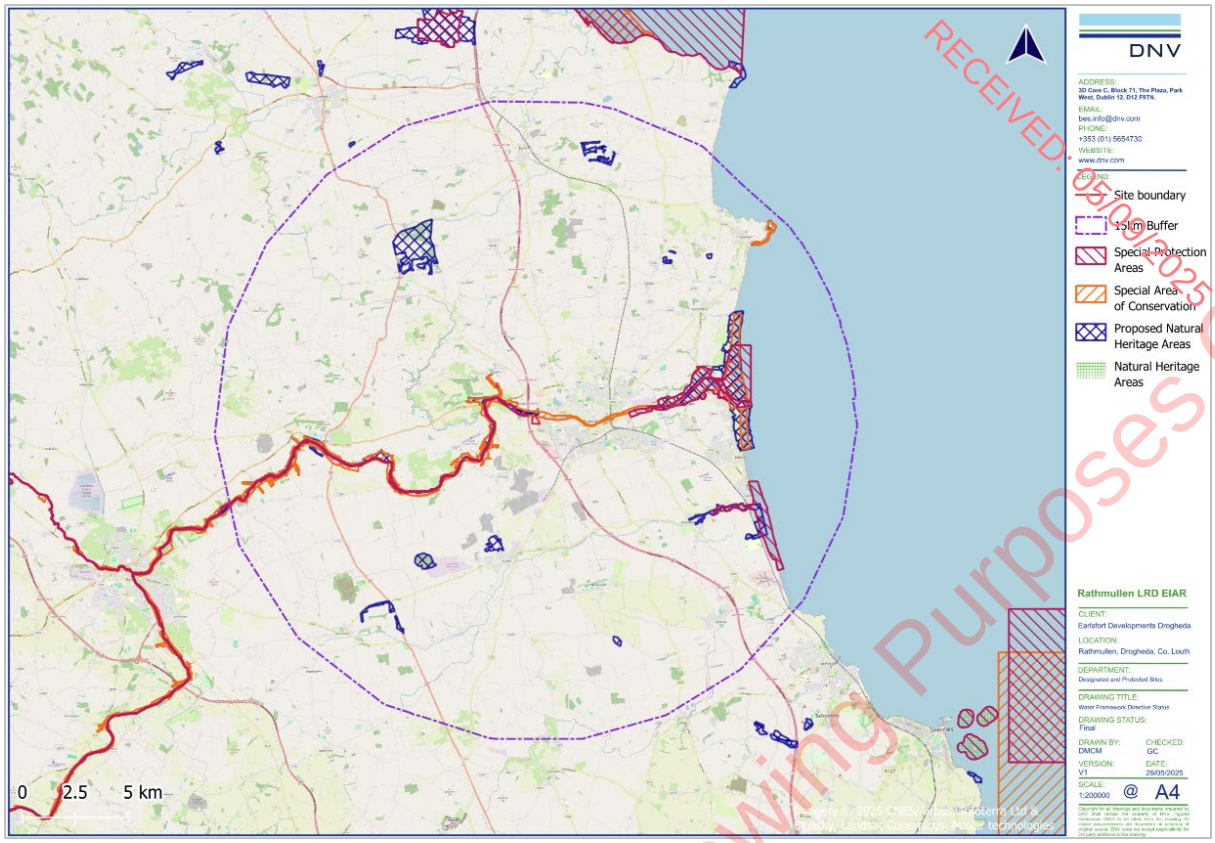



*Figure 7-9. Designated and Protected Sites*

### *7.3.10.2 Drinking Water*

The river drinking water protected areas (DWPA) are represented by the full extent of the Water Framework Directive (WFD) river waterbodies from which there is a known qualifying abstraction of water for human consumption as defined under Article 7 of the WFD. Refer to the Water Framework Directive (WFD) Report (DNV, 2025b) included in the EIAR Volume 3: Appendix 7.2.

There are two surface water drinking water sources, under Article 7 of the Water Framework Directive, identified by the EPA (EPA, 2025) within a 2km radius of the site. The Tulaigh_Álainn River (WFD Name: Boyne_180, EPA Code: IE_EA_07B042200) and the Boyne River (WFD Name: Boyne_180, EPA Code: IE_EA_07B042200). These waterbodies are upgradient of the site and therefore, not hydraulically connected to the site. Additionally, the groundwater body beneath the site, the Drogheda GWB (IE_EA_G_025), is classified under Article 7 Abstraction for Drinking Water.

### *7.3.10.3 Shellfish Areas*

Although the Shellfish Waters Directive (SWD) has been repealed, areas used for the production of shellfish that were designated under the SWD, are protected under the WFD as ‘areas designated for the protection of economically significant aquatic species’.

The requirement from a WFD perspective is to ensure that water quality does not have an effect on the quality of shellfish produced for human consumption. In Ireland, 64 areas have been designated as shellfish waters (S.I. No. 268 of 2006, S.I. No. 55 of 2009, S.I. 464 of 2009).

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The closest designated Shellfish Area location is Balbriggan\Skerries (IE_EA_020_0000) located approximately 10.35km southeast of the site (EPA, 2025).

#### *7.3.10.4 Nutrient Sensitive Areas*

EU member states are required under the Urban Wastewater Treatment Directive (91/271/EEC) to identify nutrient-sensitive areas. These have been defined as "natural freshwater lakes, other freshwater bodies, estuaries and coastal waters which are found to be eutrophic or which in the near future may become eutrophic if protective action is not taken".

The closest designated nutrient-sensitive area (estuaries and lakes) is the Boyne Estuary (IE_EA_010_0100 - Urban Wastewater Treatment Directive Sensitive Area), located approximately 40m north of the site at its closest point (EPA, 2025).

#### *7.3.10.5 Bathing Waters*

Bathing waters are designated under Regulation 5 of Directive 2006/7/EC. Designated Bathing Waters exist under S.I. No. 79/2008 and S.I. No. 351/2011 Bathing Water Quality (Amendment) Regulations 2011. EC Bathing Water Profiles - Best Practice and Guidance 2009.

Laytown/Bettystown (IEEABWC020_0000_0700) is the closest designated Bathing Water location, which is located approximately 9.7km southeast of the site (EPA, 2025).

## 7.4 Importance of Receiving Environment

The receiving water bodies have been assigned a WFD Status of 'good' for groundwater, and 'moderate' for the closest surface water bodies hydraulically connected to the site of the Proposed Development (EPA, 2025). The bedrock aquifer beneath the site is classified as Regionally Important Aquifer - Karstified (Rkd).

Overall, taking account of the receiving hydrological environment, in accordance with the criteria set out in Table 7-1, the site is considered to be of 'high' importance.

## 7.5 Characteristics of the Proposed Development

A full description of the Proposed Development is outlined in Chapter 2 of this EIAR.

The following components are of particular relevance with respect to water during the construction stage and operational stage of the Proposed Development.

### 7.5.1 Construction Phase

The construction phase of the Proposed Development will include:

- Removal of topsoil and stockpile onsite for reuse in completion of the works.
    - The stripping of topsoil will be undertaken on a phased basis so that no area is stripped until such time as works are imminent in that area.
    - Topsoil disturbed during the construction phase will be reused as much as practicable.
    - The surplus excavated topsoil will be removed to a licenced facility.
- Excavation of subsoil will be required to allow the construction of roads, building foundations, drainage, and ancillary services. The maximum excavation depths will be

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4.645m, located at the site entrance. This is for drainage in a road area to be cut in at site access.

  - Based on the cut and fill analysis, the volume of cut (i.e., excavated material) is approximately 37,524.04m$^3$ and the volume of fill is approximately 12,437.84m$^3$ (refer to Drawing No. RAT-WMX-PH2-00-DR-C-P500 - Cut & Fill Analysis-Sub Base Level submitted with the planning application under separate cover). It is estimated that approximately 25,086.20m$^3$ of this soil material will be stockpiled temporarily before being removed from site.
  - It is estimated that approximately 6,534.31m$^3$ of additional soil and subsoil material will be excavated and removed offsite for the construction of the underground attenuation tanks and foul pumping station.
  - It is anticipated that there will be no requirement for the excavation of bedrock during the construction stage of the Proposed Development.
  - Excavated soil and subsoil materials will be reused for engineering fill and landscaping where possible.

- Demolition of the existing farm buildings located within the southeastern boundary of the site. Asbestos was reported in a number of locations across the buildings (refer to Chapter 14 of the EIAR for further details on how this will be appropriately managed and removed).
- Building foundations will consist of a traditional reinforced concrete foundation founded in 100kPa allowable bearing pressure stratum. The stratum is to be stiff natural ground. Where this stratum is deep, a lean mixed trench will be constructed below the foundations to effectively found in the required stratum. There will be no requirement for piled foundations.
- There will be large quantities of materials brought to the site to facilitate construction such as concrete, concrete blocks, timber, reinforcement, pipework, insulation, fixings, plasterboard, etc. (refer to Chapter 14 of the EIAR for further details).
- Aggregate materials imported to the site (i.e., natural stones and gravel, aggregates, and related fill products) will be sourced from locally available quarries in accordance with the appropriate statutory guidelines.
- Groundwater was not encountered during site investigations which extended to a maximum depth of 8.5mbGL (WM, 2018). Therefore, it is anticipated that excavations for the construction of the Proposed Development will be above groundwater with no requirement for dewatering. However, there may be a requirement for management of surface water (rainwater) within excavations during groundworks.
- Construction of new surface water drainage (refer to Section 7.5.2.1) designed in accordance with the principles and objectives of Sustainable Drainage Systems (SuDS) and the Greater Dublin Sustainable Drainage System (GDSDS) and the requirements of Meath County Council (MCC).
- Construction of new foul and mains water connections (refer to Section 7.5.2.2 and Section 7.5.2.3) in accordance with UE Code of Practice for Wastewater Infrastructure 2020 & Standard Details for Wastewater Infrastructure (IW-CDS-5030-03) and UE's Code of Practice for Water Infrastructure (IW-CDS-5020-03).

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### 7.5.2 Operational Phase

#### *7.5.2.1 Surface Water Drainage*

Surface water runoff from the Proposed Development will be managed in a surface water drainage system designed in accordance with the principles and objectives of:

- Sustainable Drainage Systems (SuDS).
- Meath County Development Plan 2021-2027.
- Greater Dublin Sustainable Drainage Scheme (GDSDS).

As documented in the Engineering Assessment Report (WM, 2025a), it is proposed that the surface water from the Proposed Development will drain via gravity and discharge at a restricted rate into the existing 1200mm culvert adjacent to Rathmullan Road at the northeast of the site. This culvert merges into a ditch on the opposite side of the existing road approximately 120m to the north of the proposed outfall location. The ditch travels northwards for approximately 60m before outfalling into the Boyne Estuary, which is tidal at this location.

The surface water network for the Proposed Development has been divided into two separate catchments, the Northern Catchment and Southern Catchment. These catchments operate in series with runoff from the Southern Catchment flowing into the downstream Northern Catchment area at a restricted rate, equivalent to the existing 1200mm culvert adjacent to Rathmullan Road at the northeast of the site. Excess stormwater will be attenuated and will be restricted via hydrobrakes or similar approved.

- Southern Catchment: It covers a catchment area of approximately 3.019ha.
    - The total impermeable area is approximately 1.589ha.
    - The attenuation storage will accommodate the Qbar runoff rate of 10.70 l/s and will be restricted via the hydrobrake manhole with excess runoff stored in an attenuation system located on the central open space.
    - This catchment will outfall into an attenuation system, with an underground attenuation storage capable of accommodating up to 1 in 30 return years (i.e., volume of approximately 896m$^3$). The excess surface water for the 1 in 100 year storm will be attenuated in the overground detention basin that has a volume of 214.40m$^3$. The storage required is calculated to be approximately 1057.54m$^3$. However, the total surface water storage provided within the proposed attenuation system is c.1,110.4m$^3$.
    - This catchment outfalls to the downstream Northern Catchment.
- Northern Catchment: It covers a catchment area of approximately 3.167ha.
    - The total impermeable area is approximately 1.971ha.
    - The attenuation storage will accommodate the Qbar runoff rate of 11.23 l/s and will be restricted via the hydrobrake manhole with excess runoff stored in the aboveground grass detention basin system.
    - This catchment outfalls to the existing 1200 mm culvert on Rathmullan Road at a restricted rate of 21.93 l/s (total from the Southern and Northern Catchments).
    - The flow from the Southern Catchment and the Northern Catchment will outfall into an attenuation system with an underground attenuation storage whose capacity will hold up to a return year of 1 in 30 years (i.e., volume of 1000m$^3$). The excess surface water for the 1 in 100-year storm will be attenuated in the

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overground detention basin (i.e., volume of 311.35m$^3$) that will be split into two parts that will be interconnected.
  - The total surface water storage within the proposed attenuation system is approximately 1311.35m$^3$. However, the storage required is calculated to be approximately 1300m$^3$ (1 in 100-year storm events).
  - This catchment outfalls to the downstream Northern Catchment to the North direction.

The total capacity of the attenuation storage for both catchments is 2,368.89m$^3$, based on the 100-year storm event with 20% climate change. Both underground attenuation storages are designed to cater the 1 in 30-year storm events to ensure the above ground grass detention basin is dry throughout the year. Once the 1 in 30-year is exceeded, the above ground detention basin will be filled up slowly and dissipate over time.

A SUDS treatment approach has been implemented in accordance with the CIRIA SuDS Manual C753, as required by the GDSDS, to alleviate the detrimental effects of traditional urban storm water drainage practice (i.e., piping runoff of rainfall from developments to the nearest receiving watercourse).

The SuDS elements, which take account of quantity, quality and amenity issues to manage surface water runoff, are summarised as follows:

- Water Butts - utilised within each residential unit for external gardening and wash down use only, which will ensure interception of roof runoff at source.
- Permeable Pavement - allows stormwater runoff to filter through voids in the pavement surface into an underlying stone reservoir, where it is temporarily stored or infiltrated.
- Swales - an infiltration trench is incorporated at the invert of the swales which will encourage surface water to drain directly to ground. Excess water will drain to the surface water network.
- Grass Detention Basin – above ground features located at the green open space areas utilised to restrict the outflow to the greenfield runoff rate.
- Flow control device (e.g. hydrobrake or similar device) – installed at the outfall manhole of each catchment to reduce the flow rate to that of a greenfield site.
- Petrol Interceptor – installed downstream of each flow control device manhole prior to each outfall into the attenuation to ensure primary treatment of any pollutants present.

As documented in the Engineering Assessment Report (WM, 2025a), *'the management train commences with source control through the provision of filter drains. The second stage of the management train, site control, is provided by the introduction of swales, all of which provide a degree of treatment before discharging to the detention basin. The rate of runoff is controlled through the provision of a hydro-brake. The detention basin offers a third stage of treatment, regional control, by slowing the storm water discharge down and removes any additional silt which may remain in the storm water* '.

Surface water drains will be 150mm to 225mm and generally will consist of PVC (to IS 123) or concrete socket and spigot pipes (to IS 6). These drains will be laid to comply with the Requirements of the Building Regulations 2010, and in accordance with the recommendations contained in Section H of the Technical Guidance Documents. In addition, surface water public

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sewers will be 225 mm to 525 mm and will consist of PVC or concrete socket and spigot pipes (to IS 6) and will be laid strictly in accordance with the requirements of MCC (WM, 2025a).

The layout of the proposed surface water drainage network is presented in WM Drawing No. 18-014-P451 and P452 - Proposed Drainage Layout submitted with the planning application under separate cover. The surface water area catchments are presented in Figure 7-10 and WM Drawing No. P459 also submitted with the planning application under separate cover.

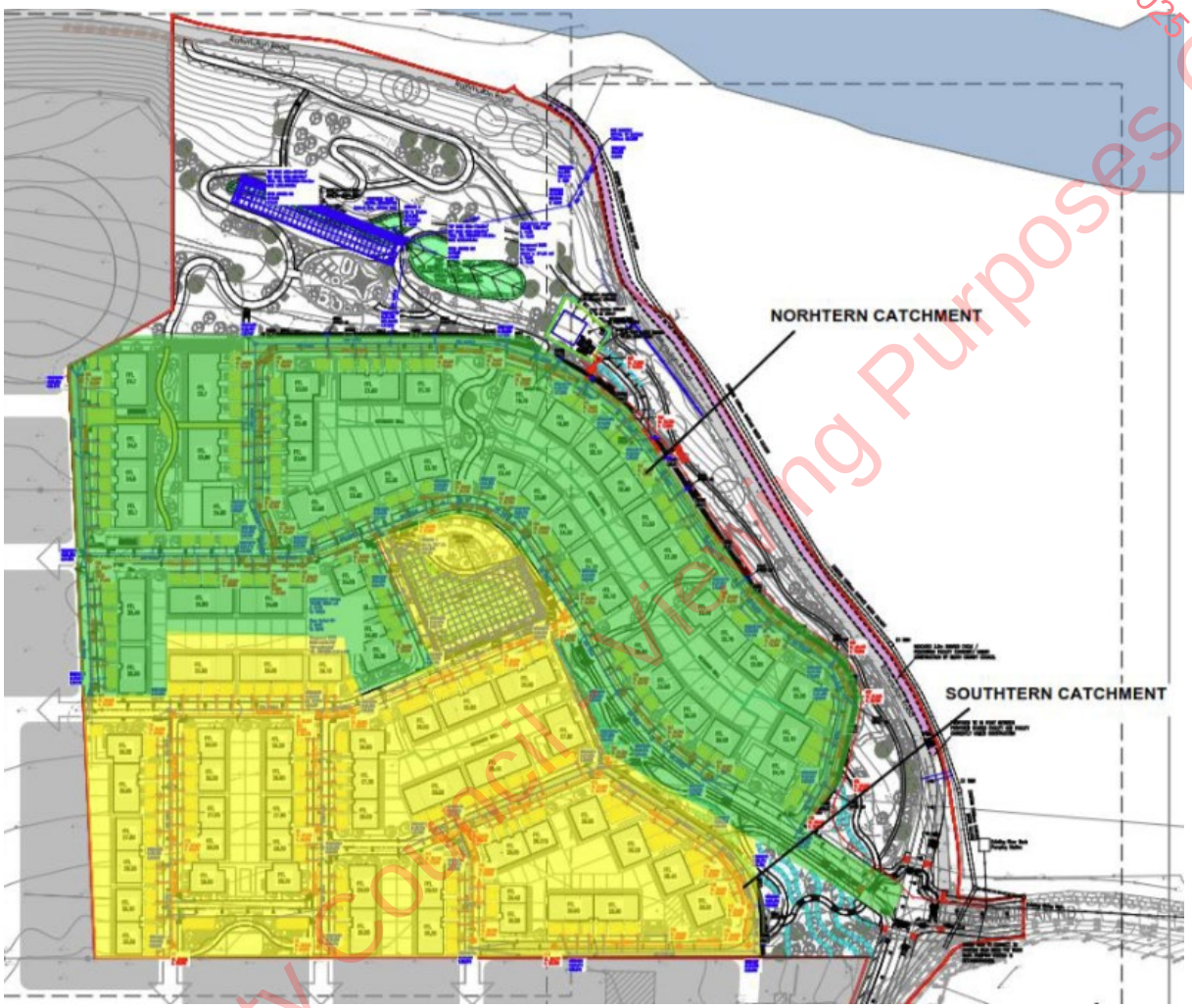



*Figure 7-10. Surface Water Catchment Areas (WM, 2025a)*

#### *7.5.2.2 Foul Drainage*

As documented in the Engineering Assessment Report (WM, 2025a), the foul drainage from the site will drain via a network of gravity sewers to a proposed pumping station located at the low point in the northeastern corner of the site. Foul water will be pumped from the proposed pumping station and will outfall to the existing foul water drainage network at the junction of Rathmullan Road and Marley's Lane.

A Confirmation of Feasibility (COF) was issued by UE on the 1st of April 2025 (UE COF Reference: CDS24009836). The UE COF confirms the connection is feasible, subject to upgrades. To address the requirements of the UE COF, a proposed new pumping station will replace the adjacent existing old pumping station and will facilitate flows from the adjacent Riverbank and Oldbridge Manor Developments. The Applicant will fund all upgrade works and

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will ensure that all works are completed in agreement with and to the satisfaction of UE prior to connection.

Foul water sewers within the Proposed Development will be laid to comply with the requirements of the Building Regulations, and in accordance with the recommendations contained in Section H of the Technical Guidance Documents.

In accordance with the Irish Water "Code of Practice for Wastewater Supply", the proposed foul outfall from the site is a 225 mm-diameter pipe laid at a gradient of 1:200, giving a capacity of 32 l/s and therefore has adequate capacity to cater for the flows from the development (WM, 2025a).

The proposed pumping station will be designed in compliance with the Irish Water Code of Practice and Irish Water Standard Details and has provision to cater for foul water storage from the Proposed Development with a total capacity of 261m$^3$. The pumping station is located with a 20m separation distance from the proposed nearest dwelling. This complies with Section 5.5 of the UE "Code of Practice for Wastewater Supply", which states that Type 3 pumping stations require a minimum buffer zone of 15m. A control kiosk will be provided adjacent to the pumping station.

The layout of the proposed foul water drainage network is presented in WM Drawing No. 18-014-P451 and P452 - Proposed Drainage Layout submitted with the planning application under separate cover

Foul water from the Proposed Development will be treated in the Drogheda WWTP (Discharge Licence No. D0041) before ultimately discharging to the Boyne Estuary transitional waterbody (EU Code: IE_EA_010_0100).

#### *7.5.2.3 Water Supply*

As documented in the Engineering Services Report (WM, 2025a), a new proposed connection will be made to the existing 150mm diameter HPPE watermain located on Rathmullan Road to the east of the site. It is noted that the 150mm diameter HPPE watermain will be upgraded to 200mm diameter as part of the Proposed Development.

A Confirmation of Feasibility (COF) was issued by UE on 1$^{st}$ April 2025 (UE COF Reference: CDS24009836). The UE COF confirms the connection is feasible, subject to upgrades including replacing approximately 140m of existing 150mm diameter HPPE watermain with a 200mm diameter watermain and the provision of approximately 50m of new 450mm ID watermain and a Flow Control Valve. All upgrade works, will be carried out by Uisce Eireann and funded by the Applicant as part of the connection agreement.

All water supply details will be in accordance with UE's Code of Practice for Water Infrastructure (IW-CDS-5020-03).

The layout of the proposed water supply is presented in WM Drawing No. 18-014-P481 and P482 - Water Supply Layout submitted with the planning application under separate cover.

## 7.6 Potential Effect of the Proposed Development

The procedure for determination of potential effects on the receiving hydrological and hydrogeological environment is to identify potential receptors within the site boundary and

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surrounding environment and use the information gathered during the desk study, the site walkover and information obtained from direct and indirect site investigations to assess the degree to which these receptors will be effected in the absence of mitigation.

The potential effects associated with the construction phase and operational phase of the Proposed Development are summarised below.

### 7.6.1 Construction Phase

#### *7.6.1.1 Hydrological and Hydrogeological Flow Regime*

During the construction phase, there will be no direct discharges to or abstractions from surface water or groundwater at the Proposed Development.

Diversions of water courses are not required for the construction phase. It is noted that flows from the upper catchment of the Sheephouse 07 River (WFD Name: Stagrennan_010)), which is culverted along the eastern boundary of the site are now incorporated into the surface water drainage network of the M1 and do not continue to flow into the disused ditch which is no longer considered to be a functional fluvial watercourse (JBA, 2025). This was confirmed during the site walkover undertaken by DNV.

It is anticipated that there will be no requirement for dewatering with the exception of surface water (rainwater) where encountered within excavations following periods of rainfall.

There will be no abstraction of water for use during construction works (i.e. dust suppression, welfare facilities). Water supply will be from the mains supply in accordance with a connection agreement from UE and therefore there will be no effect on water resources.

Therefore, there will be no effect on the hydrological and hydrogeological flow regime during the Construction Phase of the Proposed Development.

#### *7.6.1.2 Water Quality*

There is no identified hydraulic connection between the site and the Sheephouse_07 Stream (WFD Name: Stagrennan_010) which is culverted along the eastern boundary of the site. However, during rainfall events surface water runoff at the site will potentially drain via overland flow to the Boyne Estuary located along the northern boundary of the site. During the construction phase of the Proposed Development, there is a potential for release of suspended sediments entrained in surface runoff from groundworks or indirectly tracked on vehicles / machinery entering the receiving waterbodies. The Main Contractor will ensure that any runoff from the site will be managed for the duration of the construction phase to ensure that surface water runoff is contained, attenuated and treated onsite prior to discharge to surface water / groundwater. However, in the absence of mitigation measures, this may result in a ‘negative’ ‘slight to moderate’ and ‘short- term’ effect on the quality of the receiving Boyne Estuary. It is noted that this effect is considered non-significant in the context of the EIA Directive, due to its limited spatial extent, short duration, and the implementation of standard construction mitigation measures detailed in Section 7.7.1.

If the accidental release of hazardous material including fuels, chemicals and materials being used onsite, through the failure of secondary containment or a materials handling accident at the site, were to occur over open ground which will result in a temporary increase in

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groundwater vulnerability to potential contaminants, then these materials could infiltrate to the underlying groundwater. In the event of such scenario, it is considered that this could result in a 'negative' 'moderate to significant' and 'long-term" effect on the receiving hydrogeological and hydrological environment depending on the nature of the incident. In the absence of mitigation and considering the potential for widespread and lasting effects on both hydrogeological and hydrological receptors, this effect is considered significant in the context of the EIA Directive.

During excavation, there is a risk to the underlying regionally important karstified bedrock aquifer due to any accidental release of deleterious materials (e.g., fuels or other hazardous materials being used onsite), through the failure of secondary containment or a materials handling accident at the site, to exposed subsoils or bedrock creating a direct pathway to the underlying bedrock aquifer. During the construction phase the release of contaminants used onsite could enter the underlying aquifer and rapidly migrate towards receiving watercourses including the Boyne Estuary and downstream waterbodies receptors. In the event of such scenarios, it is considered that this could result in a 'negative' 'moderate to significant' and 'long term' effect on a local area of the underlying aquifer environment and the receiving Boyne Estuary and downstream waterbodies depending on the nature of the incident. This effect is considered significant in the context of the EIA Directive, however, appropriate controls detailed in Section 7.7.1 will be in place to prevent this unlikely scenario.

The Main Contractor will ensure that any runoff from the subject site or any areas of exposed soil will be managed as required with temporary pumping. Where water must be pumped from the excavations (i.e., rainwater), water will be discharged by the appointed contractor, following appropriate treatment (e.g., settlement or hydrocarbon interceptor), to sewer, watercourses or groundwater in accordance with the necessary discharge licences issued by UE under Section 16 of the Local Government (Water Pollution) Acts and Regulations for any water discharges to sewer or from Meath County Council under Section 4 of the Local Government (Water Pollution) Act 1977, as amended in 1990 for discharges to surface water / groundwater. There will be no unauthorised discharge of water (groundwater / surface water runoff) to sewer, watercourses or groundwater during the construction phase of the Proposed Development. Therefore, the potential effects will have been adequately assessed and mitigated as part of the statutory consent and there will be 'neutral', 'imperceptible' and 'temporary' effect on the receiving water environment. It is noted that this effect is considered non-significant in the context of the EIA Directive.

There is a potential risk associated with the cementitious materials used during construction works including construction of foundations, pavements and other structures effecting on the underlying groundwater at the Proposed Development site. Overall, the use of cementitious material at the Proposed Development site may result in a 'negative', 'moderate to significant' and 'medium-term' effect on the receiving water environment at the Proposed Development and is considered significant in the context of the EIA Directive.

Foul water discharge from the temporary welfare units at the site during the construction phase will be either tankered offsite in accordance with waste management legislation or discharged under temporary consent to the UE mains foul network for treatment at Drogheda WWTP subject to agreement with UE. It is considered that any effect relating to foul water during the construction phase will be 'neutral', 'imperceptible' and 'temporary' and is considered non-significant in the context of the EIA Directive.

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The release of foul water during connection to the live sewers could result in a release of contaminants to ground or as overland runoff. Due to the temporary and phased nature of the construction phase of the Proposed Development, in the absence of mitigation the potential effect from an accidental spillage is considered to be 'negative', 'moderate' and 'short-term and is considered non-significant in the context of the EIA Directive.

All surplus materials and waste that will require removal offsite will be removed in accordance with the requirements and recommendations outlined in the Resource and Waste Management Plan (RWMP), prepared by DNV (2025) and submitted under a separate cover as part of this application, and managed in accordance with all statutory obligations including where appropriate re-use as by-product in accordance with Article 27 of the European Communities (Waste Directive) Regulations 2011 (SI No. 126 of 2011) as amended (referred to hereafter as Article 27). In the unlikely event that surplus soil or other waste materials are directed to an unauthorised location there is potential to effect on the receiving hydrogeology at that location. In the event of such a scenario, it is considered that this could result in a 'negative', 'slight to moderate' and 'medium-term' effect on the hydrogeology at any receiving unauthorised locations. This effect is considered potentially significant in the context of the EIA Directive, however, appropriate controls will be in place, to prevent this unlikely scenario as detailed in the RWMP.

During a flood event, there is the potential for pollutants derived from construction materials to be mobilised by flood waters. However, as documented in the SSFRA (JBA, 2025), given the current site elevation levels remain sufficiently high and the fact that the Sheephouse_07 Stream is not considered to be a functional waterbody, the site and Proposed Development is located in Flood Zone C, where the probability of flooding is low. Therefore, there is no identified potential risk of mobilising pollutant materials used onsite (e.g., fuels, oils, etc.) as a result of flooding during the Construction Phase of the Proposed Development.

### 7.6.2 Operational Phase

During the Operational Phase of the Proposed Development, there is limited potential for any adverse effect on the receiving water (hydrological and hydrogeological) environment at the site taking account of the design for the Proposed Development.

#### *7.6.2.1 Hydrological and Hydrogeological Flow Regime*

During the operational phase there will be no direct discharges to ground from drainage and only rainfall on public open spaces will infiltrate to ground. Furthermore, there will be no groundwater or surface water abstractions during the Operational Phase.

The permeability and potential for infiltration to ground at the site will be modified with the change in cover from undeveloped grasslands to paved areas within the Proposed Development. The subsoil permeability is low (GSI, 2025), and as detailed during site investigations (WM, 2018), there is a thick layer of subsoils (stiff to very stiff CLAY material) protecting the bedrock aquifer from pollutants migrating downwards to the regionally important karstified aquifer. The Proposed Development will result in an increase of hardstanding on the site. The proposed SuDS include unlined elements allowing for infiltration to ground (though infiltration capacity is limited). Therefore, it is considered that there will be little to no change to the overall recharge potential to the aquifer in the Drogheda GWB. Taking account of the baseline hydrogeological setting and nature of the Proposed Development there will be a

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'negative', 'imperceptible' and 'permanent' effect on the hydrogeological flow regime within a very localised zone of the aquifer and this is considered non-significant in the context of the EIA Directive.

The Engineering Assessment Report (WM, 2025a) notes that the surface water drainage at the Proposed Development has been designed in accordance with SuDS and satisfies the requirements of the Greater Dublin Strategic Drainage Study (GDSDS) to meet the following design criteria.

- Criterion 1 – River Water Quality Protection.
- Criterion 2 – River Regime Protection.
- Criterion 3 – Level of Service (Flooding) / Flood Risk Assessment.
- Criterion 4 – River Flood Protection

As documented in the SSFRA (JBA, 2025), there is no identified risk of flooding at the site which is located within Flood Zone C. Therefore, it is considered that the potential flooding effects associated with the Proposed Development are 'neutral', 'imperceptible' and 'long-term' and are considered non-significant in the context of the EIA Directive

#### *7.6.2.2 Water Quality*

During the operational phase, there is limited potential for discharge of contaminated runoff to receiving water courses. Surface water runoff from the Proposed Development will be managed in accordance with the principles and objectives of SuDS, treated, and attenuated before discharging to the Boyne Estuary transitional waterbody.

There will be no requirement for bulk storage of petroleum hydrocarbon-based fuels during the operational phase, as the Proposed Development relies on space heating for the apartments and heat pumps for the rest of the buildings.

The design of the Proposed Development, including the implementation of the SuDS, aligns with the objectives of the Water Framework Directive (2000/60/EC). The measures incorporated in the SuDS design include water butts, permeable paving, swales, grass detention basin, flow control devices and petrol interceptor within the drainage and SuDS system. Those systems will be effective in the treatment and removal of any contaminants entrained in surface water runoff. The effectiveness of these SuDS measures is documented in the TII guidance (TII,2014) and the SuDS Manual (C753). The Proposed Development also includes petrol interceptors prior to discharge from the site that will be effective in the removal of hydrocarbons that may enter the drainage system in particular in the event of a worst-case scenario spill incident (e.g. collision on the roadway resulting in the loss of fuel from a vehicle).

Accordingly, any potential effect on receiving surface water and groundwater beneath the site of the Proposed Development will be avoided taking account of the design of the Proposed Development. Therefore, it is considered that the water quality protection criteria and objectives of the GDSDS and Water Framework Directive will be achieved.

Overall our conclusion is that the SuDS drainage strategy for the Proposed Development will result in an overall 'positive', 'slight' 'permanent' effect on receiving surface water quality and groundwater quality.

Foul water from the Proposed Development will be treated in the Drogheda WWTP before ultimately discharging to the Boyne Estuary Plume Zone Coastal Waterbody. The increased

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discharge to the Drogheda WWTP as a result of the Proposed Development will reduce the overall available capacity of the facility. Foul water from the Proposed Development will only be discharged to the UE foul sewer under agreement from UE and other applicable statutory consents verifying capacity at the Drogheda WWTP for the Proposed Development. The UE CoF confirms the proposed connection is feasible subject to upgrades. The Applicant will fund all upgrade works and will ensure that all works are completed in agreement with and to the satisfaction of UE prior to connection. Therefore, it is considered that the likely effect on the water quality from wastewater generated onsite runoff will be 'negative', 'imperceptible' and 'permanent' and is considered non-significant in the context of the EIA Directive.

The site is located within Flood Zone C, where the probability of flooding is low. As documented in the SSFRA (JBA, 2025), there is no significant risk of flooding to the Proposed Development which is mainly attributable to the local topography. The proposed works do not raise any significant flooding issues. As such, the risk of contamination of surface waters exacerbated during a future climate scenario flood event is considered low. Overall, flood events during the operational phase have the potential to have 'neutral', 'imperceptible' 'permanent', effects on water quality and hydrological receptors which is considered non-significant in the context of the EIA Directive.

### 7.6.3 Potential Cumulative Effects

Cumulative effects can be defined as "effects that result from incremental changes caused by other past, present or reasonably foreseeable actions together with the project". Effects which are caused by the interaction of effects, or by associated or off-site projects, are classed as indirect effects. Cumulative effects are often indirect, arising from the accumulation of different effects that are individually minor. Such effects are not caused or controlled by the project developer. The cumulative impacts also take into account the combined effects of the Proposed Development and other projects in the surrounding area, particularly where actions occur within the same timeframe.

As part of this assessment, other offsite developments and proposed offsite developments as detailed in Chapter 2 of this EIAR were reviewed and considered for possible cumulative effects with the Proposed Development.

#### *7.6.3.1 Water Resources*

As documented in the Engineering Assessment Report (WM, 2025a), the proposed water supply for the Proposed Development will be made by connecting to an existing 150mm diameter HPPE watermain located at the Rathmullan Road to the east of the site which will be upgraded to 200mm diameter.

The UE COF confirms the connection is feasible, subject to upgrades including replacing approximately 140m of existing 150mm diameter HPPE watermain with a 200mm diameter watermain and the provision of approximately 50m of a new 450mm ID watermain and a Flow Control Valve. All upgrade works will be carried out by Uisce Éireann and funded by the Applicant as part of the connection agreement. The mains water supply will be operated in accordance with relevant existing statutory consents therefore there will be no cumulative effects associated with the Proposed Development on the supply network and water resources.

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#### 7.6.3.2 *Water Quality*

Foul water from the Proposed Development will be discharged to the mains foul network for treatment at Drogheda WWTP.

The UE COF confirms the connection is feasible, subject to upgrades. To address the requirements of the UE COF, the proposed new pumping station will replace the adjacent existing old pumping station and will facilitate flows from the adjacent Riverbank and Oldbridge Manor Developments. Foul water from the Proposed Development will only be discharged to the UE foul sewer under agreement from UE and other applicable statutory consents and will be in accordance with the requirements of UE. The UE CoF confirms the proposed connection is feasible subject to upgrades. The Applicant will fund all upgrade works and will ensure that all works are completed in agreement with and to the satisfaction of UE prior to connection.

The Drogheda WWTP is operated in accordance with relevant statutory approvals issued by UE. The increase in discharge to the Drogheda WWTP as a result of the Proposed Development is considered to be insignificant in terms of the overall scale of the facility. The increased load does not have the capacity to alter the effluent released from the WWTP to such an extent as to result in likely significant effects on its receiving waters. Foul water from the site will only be discharged to the UE network under the appropriate consents from UE and therefore, the Proposed Development will have no cumulative effects individually or in-combination on the receiving water quality and WFD status.

### 7.6.4 "Do Nothing" Effect

In the "Do Nothing" Scenario, it is assumed that the Proposed Development does not proceed. In this scenario it is considered that the site would remain as undeveloped lands in the immediate term., however, the potential for future development remains. As such, even in the absence of the Proposed Development, it is considered that the types of construction and operational phase effects assessed in this chapter of the EIAR may still occur in the future, albeit under a different development proposal. In this scenario, the current assessment remains relevant as an indication of the likely nature and scale of effects associated with the development on the site.

## 7.7 Avoidance, Remedial & Mitigation Measures

The mitigation measures outlined below will ensure that there will be no significant effect arising from the Proposed Development on the receiving groundwater and surface water environment and associated receptors (e.g., Natura 2000 sites). Therefore, the Proposed Development will not have any effect on compliance with the EU Water Framework Directive, European Communities (Environmental Objectives) Surface Water Regulations (S.I. 272 of 2009 and as amended) and the European Communities Environmental Objectives (Groundwater) Regulations (S.I. No. 9 of 2010 and as amended) individually or in combination.

### 7.7.1 Construction Phase

During the Construction Phase, all works will be undertaken in accordance with the Construction Waste Management Plan (CWMP) / Construction Environmental Management Plan (CEMP) (WM, 2025b and WM, 2025c) and the Resource and Waste Management Plan

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(RWMP) (DNV, 2025c). Following appointment, the contractor will be required to further develop the CWMP, CEMP and RWMP to provide detailed construction phasing and methods to manage and prevent any potential emissions to ground and surface water with regard to the relevant industry standards (e.g., Guidance for Consultants and Contractors, CIRIA-C532', CIRIA, 2001). The CWMP, CEMP and RWMP will be implemented for the duration of the construction phase, covering construction and waste management activities that will take place during the construction phase of the Proposed Development.

Mitigation works will be adopted as part of the construction works for the Proposed Development. These measures will address the main activities of potential effect which include:

- Control and Management of surface water runoff.
- Control and management of shallow groundwater during excavation and dewatering.
- Management and control of soil and materials.
- Appropriate fuel and chemical handling, transport and storage.
- Management of accidental release of contaminants at the site.
- Control and handling of cementitious materials.

The construction works will be managed in accordance with all statutory obligations and regulations and with standard international best practice. Good construction management practices will minimise the risk of pollution from construction activities at the subject site including but not limited to:

- Construction Industry Research and Information Association (CIRIA), 2001. Control of Water Pollution from Construction Sites, Guidance for Consultants and Contractors.
- CIRIA, 2015. Environmental Good Practice on Site (C741).
- Enterprise Ireland Oil Storage Guidelines (BPGCS005).
- Environmental Protection Agency (EPA), 2013. IPC Guidance Note on Storage and Transfer of Materials for Scheduled Activities.
- CIRIA, 2007. The SuDS Manual (C697).
- UK Environment Agency, 2004. UK Pollution Prevention Guidelines (PPG).
- CIRIA, 2006. Control of Water Pollution from Linear Construction Projects: Technical Guidance (C648).
- Inland Fisheries Ireland (2016). Guidelines on Protection of Fisheries during Construction Works in and Adjacent to Waters.

#### *7.7.1.1 Control and Management of Water and Surface Runoff*

There will be no direct discharge to groundwater or surface water during the construction phase of the Proposed Development. The following mitigation measures will be adhered to during the construction phase of the Proposed Development:

- Where surface water runoff must be pumped from the excavations, water will be managed in accordance with best practice standards (i.e., CIRIA C750), the CEMP (WM, 2025b) and regulatory consents to minimise the potential effect on the local groundwater flow regime within the underlying aquifer and surface water bodies.
- Unauthorised discharge of water (groundwater / surface water runoff) to ground, drains or watercourses will not be permitted. The appointed Contractor will ensure that the

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discharge of water to ground, drains or watercourses will be in accordance with the necessary discharge licences issued by UE under Section 16 of the Local Government (Water Pollution) Acts and Regulations for any water discharges to sewer or from Meath County Council under Section 4 of the Local Government (Water Pollution) Act 1977, as amended in 1990 for discharges to surface water.

- Cut-off trenches will be constructed prior to stripping topsoil along the northern boundary of the Proposed Development. These cut-off trenches will have a settlement pond / silt trap at the end of each trench with an overflow. Straw bales will be placed within the cut-off trenches at strategic locations and at the outfall of the settlement ponds to the overflow. Silt fencing will also be installed on the downgradient side of the cut-off trenches to prevent surface water runoff to the water course and will be retained in place for the duration of the construction phase until the development is complete. The project specific CEMP (which will be prepared by the main contractor in advance of construction works commencing) will identify how the silt fencing is to be installed and maintained throughout the construction phase.
- All existing services will be located using service records, GPR surveys and slit trenches to ensure that their position is accurately identified before excavation works commence.
- All water leaving the site during construction will be desilted using standard techniques. Settlement ponds/silt traps will be provided by the contractor where necessary and regularly maintained to prevent silts and soils from being washed away into the existing ditches/watercourses during periods of heavy rain and during the drainage works.
- The main contractor will appoint a suitably qualified person to oversee the implementation of measures for the prevention of pollution to the receiving surface water environment.
- Regular testing of surface water discharges will be undertaken at the outfall from the subject lands. The location will be agreed between the project ecologist and the site foreman at the commencement of works. Trigger levels for halting works and re-examining protection measures will be: pH >9.0 or pH 25 mg/l. These trigger levels are based on those outlined within ‘Guidelines on Protection of Fisheries During Works in and Adjacent to Waters (IFI, 2016)’.
- Where silt control measures are noted to be failing or not working adequately, works will cease in the relevant area. The project ecologist will review and agree alternative pollution control measures, such as deepening or redirecting trenches as appropriate, before works may recommence.
- The use of wheel wash and water treatment facilities will be used as required onsite. The correct use and management of these will be undertaken by the appointed contractor to ensure that there is no harm to the receiving water environment.
- Where required, stockpiles of loose materials pending re-use onsite will be protected for the duration of the works and not located in areas where sediment laden runoff may enter existing surface water drains.
    - To help shed rainwater and prevent ponding and infiltration, the sides and top of the stockpiles will be regraded to form a smooth gradient with compacted sides reducing infiltration and silt runoff.
    - Where required, silt fences will be erected at the toe of stockpiles to prevent runoff.

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    - The silt fences will be monitored daily by the appointed contractor and silt will be removed as required.
- A regular review of weather forecasts of heavy rainfall will be conducted, and a contingency plan will be prepared before and after such events to minimise any potential nuisances. As the risk of the break-out of silt-laden runoff is higher during these weather conditions, no work will be carried out during such periods where possible.

#### *7.7.1.2 Concrete Works*

The use of cementitious grout used during the construction phase of the Proposed Development will avoid any contamination of the receiving hydrogeological environment through the use of appropriate design and methods implemented by the appointed contractor and in accordance with the CEMP (WM, 2025b), and relevant industry standards to prevent effect on groundwater and surface water quality such as the use of water compatible grout.

The following are mitigation measures that need to be adhered to when using concrete for the Proposed Development:

- All ready-mixed concrete will be delivered to the site by truck.
- Concrete batching will take place offsite.
- Wash down and wash out of concrete trucks will take place into a container located within a controlled bunded area which will then be emptied into a skip for appropriate compliant removal offsite in accordance with all relevant waste management legislation.
- Any excess concrete is not to be disposed of onsite.
- Pouring of cement-based materials for works will only be carried out in dry conditions and pumped concrete will be monitored to ensure there is no accidental discharge.
- A suitable risk assessment for wet concreting shall be completed prior to works being carried out. Pumped concrete will be monitored to ensure there is no accidental discharge.
- Pouring of concrete will not be permitted within 50m of any watercourse during inclement weather.

#### *7.7.1.3 Handling of Fuels, Chemicals and Materials*

Fuelling and lubrication of equipment will be carried out in accordance with the procedures outlined in the CEMP (WM, 2025b), in a designated area of the site (i.e., bunded areas) away from any watercourses and drains (where not possible to carry out such activities offsite) with full attendance of plant operatives.

Fuel will not be stored onsite for the duration of the construction phase. Fuel will only be brought to site via mobile fuel bowser. Any other oils or hydraulic oils stored onsite will be stored in designated areas in suitable tanks and containers. These areas will be bunded and located away from surface water drainage and features (i.e., bunded compounds on flat ground at the Contractor's compound or at a location at least 50m from any watercourse or other water conducting features, including the cut off trenches). The main contractor will maintain an emergency response action plan and emergency procedures will be developed by the appointed contractor in advance of any works commencing.

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- Bunds will have regard to Environmental Protection Agency guidelines 'Amendment to IPC Guidance Note on Storage and Transfer of Materials for Scheduled Activities' (EPA, 2013). All tank and drum storage areas will, as a minimum, be bunded to a volume not less than the greater of the following:
    - 110% of the capacity of the largest tank or drum within the bunded area; or
    - 25% of the total volume of substance that could be stored within the bunded area.
- Strict supervision of contractors will be adhered to in order to ensure that all plant and equipment utilised onsite is in good working condition.
- Any equipment not meeting the required standard will not be permitted for use within the Proposed Development site.
- Only emergency breakdown maintenance will be carried out onsite.
- Drip trays and spill kits will be available onsite to ensure that any spills from vehicles are contained and removed offsite.
- Spill kits will be made available and kept onsite at all times and identified with signage for use in the event of an environmental spill or leak.
- A spill kit will be kept in close proximity to the fuel storage area for use in the event of any incident during refuelling or maintenance works.
- Heavy machinery used on the site will also be equipped with its own spill kit.
- Method statements for dealing with accidental spillages will be provided by the Contractor for review by the Employer's Representative.
- There may also be the requirement for use of portable generators or similar fuel containing equipment during the construction phase of the Proposed Development, which will be placed on suitable drip trays. Regular monitoring of drip tray content will be undertaken to ensure sufficient capacity is maintained at all times.
- Suitable bunded areas will be installed for oil and petrol storage tanks.
- Designated fuel filling points will be put in place with appropriate oil and petrol interceptors to provide protection from accidental spills.
- Where contractors are required to refuel vehicles, this will only be carried out at the designated refuelling location within the site storage compound, which must employ pollution control mechanisms to prevent escape of fluids to the river. No refuelling is permitted on site, i.e. within the river or adjacent due to risk of spillage.
- The local authority will be informed immediately of any spillage or pollution incident that may occur onsite during the construction phase.

#### *7.7.1.4 Emergency Procedures*

Emergency procedures will be developed by the appointed contractor in advance of works commencing. Remedial action will be immediately implemented to address any potential effects in accordance with industry standards and legislative requirements. The following mitigation measures will be adhered to as follows:

- Any required emergency vehicle or equipment maintenance work will take place in a designated impermeable area within the site.
- Emergency response procedures and contingency plans will be put in place, in the unlikely event of emergency accidents (i.e., spillages of fuels or lubricants).
- Spill kits, including oil absorbent material, will be provided and available onsite, so that any spillage of fuels, lubricants or hydraulic oils will be immediately contained.

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- In the event of a leak or spill from equipment in the instance of a mechanical breakdown during operation, any contaminated soil will be removed from the Proposed Development site and compliantly disposed of offsite. Residual soil will be tested to validate that all potentially contaminated material has been removed. This procedure will be undertaken in accordance with industry best practice procedures, standards and EPA guidelines.
- All construction works staff will be familiar with the emergency procedures in the event of accidental fuel spillages.
- All construction works staff onsite will be fully trained on the use of equipment.

#### *7.7.1.5 Infrastructure*

All below ground drainage infrastructure will be constructed in accordance with current UE requirements to ensure that there are no potential effects to groundwater quality.

#### *7.7.1.6 Welfare Facilities*

Temporary welfare facilities have the potential, if not managed appropriately, to release organic and other contaminants to ground or surface water courses.

The following mitigation measures will be adhered to during the construction phase of the Proposed Development as follows:

- Foul drainage will be discharged to temporary holding tank(s) the contents of which will periodically be tankered offsite to a licensed facility by an appropriately authorised contractor.
- All waste will be managed in accordance with the relevant statutory obligations.
- Any connection to the public foul drainage network during the construction phase of the Proposed Development will be undertaken in accordance with the necessary temporary discharge licences issued by UE.

### 7.7.2 Operational Phase

Based on the design of the Proposed Development there are limited potential sources of contamination during the operational phase. Surface water will be managed in accordance with the principles and objectives of SuDS and the GDSDS to treat and attenuate water prior to discharging offsite. Ongoing regular operational monitoring and maintenance of drainage and the SuDS measures will be incorporated into the overall management strategy for the Proposed Development. This will ensure that there are no effects on water quality and quantity (flow regime) during the operational phase of the Proposed Development.

Foul water during the operational phase of the Proposed Development will ultimately discharge via the Drogheda WWTP to the Boyne Estuary Plume Zone coastal waterbody. The Drogheda WWTP is operated in accordance with relevant statutory approvals issued by UE. Foul water from the site will only be discharged to the UE network under the appropriate consents from UE, and therefore, the Proposed Development will not cause a potential effect at any Natura 2000 sites associated with discharges from the site.

There is no other requirement for mitigation measures for the operational phase of the Proposed Development.

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## 7.8 Water Framework Directive

The EU Water Framework Directive (2000/60/EC), as amended by Directives 2008/105/EC, 2013/39/EU, and 2014/101/EU ("WFD"), was established to ensure the protection and enhancement of the water environment across all EU member states. In Ireland, the WFD has been transposed through the European Communities (Water Policy) Regulations 2003 (S.I. No. 722 of 2003).

The WFD requires that all member states protect and improve water quality in all waters, with the objective of achieving at least 'good' status by 2027. It applies to all surface waters (including rivers, lakes, reservoirs, streams, and canals), groundwater, transitional (estuarine), and coastal waters. Any new development must ensure that this objective is not compromised.

A risk-based assessment was undertaken to evaluate the potential effect of the Proposed Development on water quality within the surrounding hydrological environment. This assessment considered both the baseline conditions and the relevant legislative framework, including the WFD and associated national regulations

### 7.8.1 Waterbody Status

The risk-based assessment focused on the following waterbodies that have a potential hydraulic connection to the site:

- Drogheda GWB,
- Boyne Estuary Transitional Waterbody
- Boyne Estuary Plume Zone Coastal Waterbody

There is no identified potential effect to other tidally linked transitional and coastal waterbodies attributed to the anticipated assimilation capacity of the receiving water bodies taking account of the existing baseline conditions and WFD Status.

### 7.8.2 Assessment

The findings of the risk-based assessment identified that in the absence of any mitigation and avoidance measures there could be a potential effect on the water quality (WFD Status) within receiving water bodies associated with the Proposed Development, specifically within the Drogheda GWB, the Boyne Estuary Transitional Waterbody and the Boyne Estuary Plume Zone Coastal Waterbody. The potential effect on WFD status for water bodies was assessed based on the worst-case scenario, taking account of the baseline hydrological and hydrogeological conditions at the subject site and the WFD status assigned by the EPA (EPA, 2025).

To address potential risks, the Proposed Development incorporates design avoidance and mitigation measures as outlined in this chapter of the EIAR, including the implementation of a project specific CEMP during the construction phase and the incorporation of SuDS in the design of the Proposed Development. These measures will serve to mitigate any potential effect on the receiving groundwater and surface water environment. Hence, the Proposed Development will not have any effect on compliance with the EU Water Framework Directive.

Further details of the assessment are included in the WFD Report (DNV, 2025b) included in the EIAR Volume 3: Appendix 7.2.

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### 7.8.3 Conclusion

Taking into account the embedded design and mitigation measures, the Proposed Development:

- Will not result in deterioration of the status of hydrologically and hydrogeologically connected waterbodies.
- Will not compromise the objective of achieving 'good' surface water status or good ecological potential.
- Will remain compliant with the WFD and relevant national legislation.

There will be no adverse effect on the existing WFD status of hydrologically and hydrogeologically connected waterbodies associated with the Proposed Development including the Boyne Estuary Transitional Waterbody, the Boyne Estuary Plume Zone Coastal Waterbody and the Drogheda GWB. Refer to the WFD Report (DNV, 2025b) included in the EIAR Volume 3: Appendix 7.2.

Overall, there will be a 'neutral to positive', 'slight to moderate' and 'long-term' effect on the WFD Status which is considered non-significant in the context of the EIA Directive.

### 7.8.4 "Worst Case" Scenario

During the construction phase, there is a potential risk of accidental release of petroleum hydrocarbons (e.g., fuel spill) that could migrate to groundwater or surface water and effect on the quality of the receiving water body and downstream receptors, depending on the nature of the incident. In the absence of any mitigation measures and worst-case scenario, it is considered that there would be a potential 'negative', 'significant', 'medium-term' effect on the quality of a localised area of the aquifer and on the receiving waterbodies (i.e., Boyne Estuary).

In a worst-case scenario, there is a potential risk of accidental release of untreated water via failure or rupture of the drainage system with potential effects on the receiving water environment. It is considered that the potential risk of the release of untreated water will present a 'negative', 'moderate' and 'long-term' effect on the receiving environment.

However, these worst-case scenarios are deemed to be unlikely scenarios taking account of the embedded design avoidance measures and mitigation measures and therefore, there would be a 'neutral', 'imperceptible' and 'short-term' effect on the receiving environment.

## 7.9 Residual Effects

Residual Effects are defined as 'effects that are predicted to remain after all assessments and mitigation measures. They are the remaining 'environmental costs' of a project and are the final or intended effects of a development after mitigation measures have been applied to avoid or reduce adverse effects.

The predicted effects of the construction and operational phases are described in Table 7-10 in terms of quality, significance, extent, likelihood, and duration. The relevant mitigation measures are detailed, and the residual effects are determined which take account of the avoidance, remedial and mitigation measures.

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Overall, considering the avoidance, remedial and mitigation measures detailed in Section 7.7, the residual effects regarding the construction and operational phases of the Proposed Development are considered 'imperceptible' to the receiving water environment (hydrology and hydrogeology) hydrologically and hydrogeologically connected to the site and considered non-significant in the context of the EIA Directive.

There will be no effect to water quality and the existing WFD Status of water bodies associated with the Proposed Development including the Boyne Estuary Transitional Waterbody, the Boyne Estuary Plume Zone Coastal Waterbody and the Drogheda GWB as a result of the Proposed Development taking account of design avoidance and mitigation measures where required.

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*Table 7-10. Summary of Residual Effects*

| Activity | Attribute | Predicted Effect | Quality | Significance | Duration | Type | Mitigation | Residual Effect |
|---|---|---|---|---|---|---|---|---|
| **Construction Phase** | | | | | | | | |
| Potential uncontrolled release of hazardous materials including fuels, oils and other materials | Groundwater and Receiving Surface Water Quality and WFD status | Potential (albeit low) for uncontrolled release of deleterious materials including fuels and other materials being used onsite, through the failure of secondary and tertiary containment or materials handling accident, to the receiving groundwater environment. | Negative | Moderate to Significant | Long-term | Direct | Refuelling of plant and storage of any deleterious materials including fuels will be undertaken in accordance with the requirements and procedures outlined in the CEMP. | Imperceptible |
| Introduction of Cementitious Materials to Groundwater | Groundwater Quality and WFD status | Potential release of cementitious material during construction works for foundations, pavements and infrastructure. | Negative | Moderate to Significant | Medium Term | Direct | Where cast-in-place concrete is required, all work will be carried out to avoid any contamination of the receiving water environment through the use of appropriate design and methods implemented by the appointed Contractor and in accordance with the project specific CEMP and relevant industry standards | Imperceptible |
| | | | | | | | All surplus materials and waste that will require removal offsite will be | Imperceptible |

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| Activity | Attribute | Predicted Effect | Quality | Significance | Duration | Type | Mitigation | Residual Effect |
|---|---|---|---|---|---|---|---|---|
| Removal of Surplus Materials and Waste | Groundwater Quality and WFD status at the destination site. | In the unlikely event that surplus soil or other waste materials are directed to an unauthorised location there is potential to effect on the receiving hydrogeology at that location | Negative | Slight to Moderate | Medium Term | Direct | managed in accordance with all statutory obligations including where appropriate re-use as by-product in accordance with Article 27 of the European Communities (Waste Directive) Regulations 2011 (SI No. 126 of 2011) as amended (referred to hereafter as Article 27). | |
| Surface Runoff Containing Contaminants or Suspended Solids. | Surface Water Quality | Potential for contaminants entrained in surface runoff to enter the receiving drainage channels on lands adjoining the Proposed Development site. | Negative | Slight to Moderate | Short term | Direct/Indirect | Site works will be managed to prevent runoff migrating offsite. Wheel wash facilities will be used to prevent tracking of debris to haul routes that may runoff to water courses. | Imperceptible |
| Release of foul water during connection to live sewers | Groundwater and Receiving Surface Water Quality and WFD status | The release of foul water during connection to the live sewers could result in a release of contaminants to ground or as overland runoff. | Negative | Moderate | Short-term | Direct | Foul water drainage infrastructure will be designed and constructed in accordance with current guidelines and the measures outlined in the CEMP and current UE requirements. Procedures will be in | Imperceptible |

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| Activity | Attribute | Predicted Effect | Quality | Significance | Duration | Type | Mitigation | Residual Effect |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | place for the connection to prevent any accidental release during works. | |
| Accidental release of deleterious materials including fuel and other materials being used on-site | Groundwater and Receiving Surface Water Quality and WFD status | Potential for effect on Drogheda GWB, affecting the receiving Boyne Estuary and downstream waterbodies. | Negative | Moderate to Significant | Long Term | Direct / Worst Case | Appropriate mitigation measures to prevent the worst-case scenario occurring will be implemented during the Construction Phase. | Imperceptible |
| **Operational Phase** | | | | | | | | |
| There will be no direct or indirect effect on the receiving hydrological and hydrogeological environment associated with the operational phase of the Proposed Development. | | | | | | | | |

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## 7.10 Monitoring

### 7.10.1 Construction Phase

During the construction phase of the Proposed Development the following monitoring measures will be considered:

- An Ecological Clerk of Works (ECoW) or Project Ecologist will be appointed to ensure best practices are carried out during any works carried out near the drainage ditch onsite.
- The Project Ecologist will supervise the sampling of suspended solids downstream prior to commencement of works, and weekly during remediation works. Samples will be analysed onsite. Should results show a 10% increase in suspended solids downstream of the site this will be brought to the attention of the contractor by the Project Ecologist and any suitable contingency measures will be instigated.
- Routine inspections of construction activities will be undertaken, on a daily basis by the contractor staff, during excavations and other groundworks to ensure that measures that are protective of water quality outlined in this EIAR are fully implemented and effective and are in compliance with the CEMP (WM, 2025b) and that the requirements of the Conditions of Planning, the NIS and associated documentation are being adhered to during construction.
- The Project Ecologist will keep records of works undertaken.
- All surface water control measures including silt traps, silt fences and settlement ponds will be checked regularly and maintained as necessary, in order to ensure continued effectiveness throughout the construction phase.
- Surface water samples will be collected at the commencement of works to establish the baseline scenario. The monitoring locations will be agreed with MCC in advance of works commencing.
- Visual inspection of the watercourse/ditch will be undertaken daily to ensure no sediment/pollutant deposits are evident. Additionally, the Contractor will develop their own site inspection programme, which will include an inspection procedure and relevant forms to record any issues.
- Only suitably trained staff will undertake environmental site inspections.
- Water samples will be taken once a month during the construction phase to demonstrate compliance with surface water regulation EQS standards. The monitoring locations will be agreed with MCC in advance of works commencing.
- The proposed surface water monitoring suite will include the following parameters: pH, electrical conductivity, total suspended solids, Total Petroleum Hydrocarbons, nitrate, ammonia, and COD. However, the final suite of analysis will be agreed with MCC in advance of works commencing.
- Discharges to surface water / foul sewers will be monitored where required in accordance with statutory consents (i.e., discharge licence). Where required, water pumped from excavations will be treated and pumped to a holding area, where it will be sampled and tested by the contractor before discharge. Upon receiving analysis results and screening against required consent limits, the contractor will arrange for appropriate disposal.

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- Routine monitoring and inspections during refuelling, concrete works to ensure no effects and compliance with avoidance, remedial and mitigation measures.

### 7.10.2 Operational Phase

Ongoing regular operational monitoring and maintenance of drainage and the SuDS measures will be undertaken throughout the lifetime of the operational phase of the Proposed Development.

In addition, surface water quality monitoring will be undertaken at the outlet to the existing culvert following completion of the construction phase of the Proposed Development in order to ensure that the discharge is meeting all the relevant EQS limits. The scope and frequency of sampling will be agreed with MCC in advance.

## 7.11 Interactions

### 7.11.1 Population and Human Health

An assessment of the potential effect of the Proposed Development on human health is included in Chapter 4 of this EIAR.

Pollution events can affect the water quality and thus effect the human health of the surrounding population. Appropriate surface water control measures will be implemented as part of the Proposed Development.

Appropriate industry standard and health and safety legislative requirements will be implemented during the construction phase of the Proposed Development, that will be protective of site workers (i.e., during the removal of asbestos at the farm buildings).

### 7.11.2 Land, Soil and Geology

An assessment of the potential effect of the Proposed Development on the land and soils is included in Chapter 6 of this EIAR. During the construction of earthworks, heavy rainfall events have the potential to mobilise contaminated runoff and effect on the usability of materials stored onsite. This could therefore require the importation of additional material from external sources. Mitigation measures to reduce the risk of damage to construction materials from heavy rainfall and flood events are outlined in Chapter 7 of this EIAR.

### 7.11.3 Biodiversity

An assessment of the potential effects of the Proposed Development on the Biodiversity of the site, with emphasis on habitats, flora and fauna which may be effected as a result of the excavation and importation of materials to the site is included in Chapter 5 of this EIAR. It also provides an assessment of the effects of the Proposed Development on habitats and species, particularly those protected by national and international legislation or considered to be of particular conservation importance and proposes measures for the mitigation of these effects.

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### 7.11.4 Material Assets

An assessment of the potential effect of the Proposed Development on the material assets - waste and utilities including built services and infrastructure has been set out in Chapter 14 of this EIAR.

During the construction phase of the Proposed Development discharges of water to the public foul sewer will be in accordance with the necessary discharge licence issued by UE under Section 16 of the Local Government (Water Pollution) Acts and Regulations.

During the operational phase of the Proposed Development, any discharges to the public foul sewer and water supply to the Proposed Development will be under consent from UE.

## 7.12 Difficulties Encountered When Compiling

There were no difficulties encountered in the preparation of this chapter of the EIAR.

## 7.13 Conclusion

Overall, taking into account the avoidance, remedial, and mitigation measures outlined in Section 7.7, the residual effects associated with both the construction and operational phases of the Proposed Development are considered imperceptible in terms of their impact on the receiving environment (hydrogeology). These effects are deemed non-significant within the context of the EIA Directive. Furthermore, no hydrological and hydrogeological-related constraints have been identified that would be expected to hinder or prevent the Proposed Development from proceeding as planned.

There will be no effect to water quality and the existing WFD Status of water bodies associated with the Proposed Development including the Boyne Estuary Transitional Waterbody, the Boyne Estuary Plume Zone Coastal Waterbody and the Drogheda GWB as a result of the Proposed Development taking account of design avoidance and mitigation measures where required.

## 7.14 References

Asbestos & Lead Surveying and Testing Consultancy. About Safety Ltd., 2025 (About Safety, 2025). Refurbishment and Demolition Survey. *Derelict Farm Buildings, Rathmullan Road, Drogheda, Co. Louth*.

Council Directive 80/68/EEC, 1979. On the protection of groundwater against pollution caused by certain dangerous substances. Council of European Communities.

Council Directive 2006/118/EEC, 2006. On the protection of groundwater against pollution and deterioration. European Parliament and the Council of European Communities.

Construction Industry Research and Information Association, 2000. Environmental Handbook for Building and Civil Engineering Projects.

Construction Industry Research and Information Association, 2015. Environmental good practice on site guide (CIRIA - C741).

RECEIVED: 05/09/2025
Meath County Council - Viewing Purposes Only!

CIRIA (Construction Industry Research and Information Association), 2001. Control of water pollution from construction sites – guide to good practice, (CIRIA 532)

Directive 2000/60/EC of the European Parliament and of the Council establishing a framework for the Community action in the field of water policy.

Directive 2012/18/EU of the European Parliament and of the Council of 4 July 2012 on the control of major-accident hazards involving dangerous substances, amending and subsequently repealing Council Directive 96/82/EC.

DNV, 2025 (DNV, 2025a). Hydrological and Hydrogeological Risk (HRA) Assessment Report.

DNV 2025 (DNV, 2025b). Water Framework Directive Assessment (WFD) Report.

DNV, 2025 (DNV, 2025c). Resource and Waste Management Plan.

Environmental Protection Agency, 2025. EPA Envision Maps. https://gis.epa.ie/EPAMaps/Water. Consulted in June 2025.

Geological Survey of Ireland, 2025. GSI webmapping, 2025. https://dcenr.maps.arcgis.com/apps/MapSeries/index.html?appid=a30af518e87a4c0ab2fbde2aaac3c228. Consulted in June 2025.

Geological Survey of Ireland, 2017. A Description of Irish Aquifer Categories.

Geological Survey of Ireland, 2025. Groundwater Body Reports, Clare-Corrib GWB. Consulted in June 2025.

Google Earth Pro, 2025. Consulted in June 2025.

JBA Consulting, 2025. Rathmullan, Co. Meath. Flood Risk Assessment Draft Report.

Meath County Council (MCC, 2025). Meath County Development Plan 2021-2027.

National Parks and Wildlife Services (NPWS) webmapping 2025. https://dahg.maps.arcgis.com/apps/webappviewer/index.html?id=8f7060450de3485fa1c1085536d477ba. Consulted in June 2025.

Ordnance Survey Ireland, 2025. Ordnance Survey Ireland webmapping http://map.geohive.ie/mapviewer.html. Consulted in June 2025.

Teagasc, 2025 webmapping. http://gis.teagasc.ie/soils/map.php. Consulted in June 2025.

Uisce Eireann, 2023. Drogheda WWTP (D0041-01) Annual Environmental Report 2023.

Water Framework Directive, 2025. Water Framework Directive web mapping - http://watermaps.wfdireland.ie/NsShare_Web/. Consulted in June 2025.

Waterman Moylan Consulting Engineers, 2018. Report on a Site Investigation for a Housing Development at West Drogheda, County Meath. Report No. 21345.

Waterman Moylan Consulting Engineers, 2025 (WM Engineers, 2025a). Engineering Assessment Report. Proposed Residential Development at Rathmullan, Drogheda, County Meath.

RECEIVED: 05/09/2025
Meath County Council - Viewing Purposes Only!

Waterman Moylan Consulting Engineers, 2025 (WM Engineers, 2025b). Construction Environmental Management Plan Proposed Residential Development at Rathmullan, Drogheda, Co. Meath.

Waterman Moylan Consulting Engineers, 2025 (WM Engineers, 2025c). Construction Waste Management Plan Proposed Residential Development at Rathmullan, Drogheda, Co. Meath.

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# 8 AIR QUALITY

## 8.1 Introduction

This chapter describes and assesses the potential effects on air quality associated with the Proposed Development.

### 8.1.1 Quality Assurance and Competence

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

This chapter was reviewed by Grainne Ryan, Principal EIA Consultant at DNV. Gráinne is an Environmental Consultant with 11 years' experience, specialising in EIAs for strategic infrastructure, renewable energy, residential, industrial and pharmaceutical projects. Gráinne has a B.A, in Geography, Planning and Environmental Policy, an MSc in Environmental Policy and a Post Graduate Diploma in Project Management.

This chapter has been approved by Catherine Keogan, Technical Director and EIA Lead at DNV. Catherine is an environmental consultant with 37 years' experience in consultancy, specialising in EIAs for large-scale residential, commercial developments, pharmaceutical, BESS and solar projects working closely with a range of developers, planning consultants and architects within the public and private sector. Catherine has a B.Sc. (Hons) in Analytical Science and a Post Graduate Diploma in Renewable Energy Technology Systems.

## 8.2 Study Methodology

This study methodology is in line with accepted practices. Taking into account Ambient Air Quality Standards, the baseline air quality of the site is examined using EPA monitoring data. Air quality effects from the Proposed Development are then determined by a qualitative assessment of the nature and scale of dust and emission generating activities associated with the construction phase of the Proposed Development in accordance with relevant guidance (Institute of Air Quality Management (IAQM) 2024).

In addition to assessing the effect on people as a result of air quality, the effect on sensitive ecosystems must also be assessed as per the TII guidelines (TII, 2022; 2024). The EC Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora (the *'Habitats Directive'*) requires an Appropriate Assessment to be carried out where there is likely to be a significant effect upon a European protected site. TII requires the Air Quality Specialist to liaise with an ecologist on schemes where there is a European protected site within 2km of the site. The following internationally designated sites are within 2km of the Proposed Development:

- River Boyne and River Blackwater SAC; and

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- River Boyne and River Blackwater SPA.

This study involved coordination with the ecologist preparing the Biodiversity Chapter and Natura Impact Statement (NIS) and should be read in conjunction with Chapter 5 Biodiversity and the Appropriate Assessment (AA) Screening/NIS, and should be read in conjunction with the Population and Human Health, Land and Soils, Biodiversity, Climate and Traffic Chapters of this EIAR, as well as the Appropriate Assessment Screening/NIS, where potential impacts to the nearest Natura 2000 sites are further assessed.

### 8.2.1 Relevant Legislation and Guidance

The principal guidance and best practice documents used to inform the assessment of potential impacts on air quality is as follows:

- Guidelines for Planning Authorities and An Bord Pleanála on carrying out Environmental Impact Assessment (Department of Housing, Planning & Local Government (DHPLG), 2018);
- Environmental Impact Assessment of Projects: Guidance on the preparation of the Environmental Impact Assessment Report (European Commission, 2017);
- Guidelines on the Information to be Contained in Environmental Impact Assessment Reports (hereafter referred to as the Environmental Protection Agency (EPA) Guidelines) (EPA, 2022);
- Guidance on the Assessment of Dust from Demolition and Construction Version 2.2 (Institute of Air Quality Management (IAQM), 2024);
- A Guide To The Assessment Of Air Quality Impacts On Designated Nature Conservation Sites (Version 1.1) (IAQM, 2020);
- TII Guidance Air Quality Assessment of Specified Infrastructure Projects – PE-ENV-01106 and TII Road Emissions Model (REM) online calculator tool (TII, 2022); and
- TII Road Emissions Model (REM): Model Development Report – GE-ENV-01107 (TII, 2024).

#### *8.2.1.1 Ambient Air Quality Standards*

In order to reduce the risk to health from poor air quality, National and European statutory bodies, the Department of the Environment, Heritage and Local Government in Ireland (DEHLG, 2004) and the European Parliament and Council of the European Union, have set limit values in ambient air for a range of air pollutants. These limit values or *'Air Quality Standards'* are health or environmental-based levels for which additional factors may be considered. For example, natural background levels, environmental conditions and socio-economic factors may all play a part in the limit value which is set.

Air quality significance criteria are assessed based on compliance with the appropriate standards or limit values. The applicable standards in Ireland include the Air Quality Standards Regulations 2022, which incorporate European Commission Directive 2008/50/EC, which has set limit values for numerous pollutants with the limit values for $NO_2$, $PM_{10}$, and $PM_{2.5}$ being relevant to this assessment. Directive 2008/50/EC also sets ambient air quality limit values for other pollutants including sulphur dioxide ($SO_2$), carbon monoxide (CO), and benzene. While these pollutants are not considered significant in the context of this residential development,

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where traffic-related emissions such as $NO_2$ and PM are more relevant, they are acknowledged for completeness and regulatory requirement.

Council Directive 2008/50/EC combines the previous Air Quality Framework Directive (96/62/EC) and its subsequent daughter directives (including 1999/30/EC and 2000/69/EC) and includes ambient limit values relating to $PM_{2.5}$. In addition, Ireland is a signatory to the Gothenburg Protocol under the United Economic Commission for Europe (UNECE) Convention on Long-Range Transboundary Air Pollution (LRTAP). The Protocol sets national emission reduction commitments for key pollutants including $SO_2$, nitrogen oxides ($NO_x$), volatile organic compounds (VOCs), ammonia ($NH_3$) and $PM_{2.5}$. While it does not establish ambient air quality standards, it supports national and EU-level efforts to reduce transboundary air pollution and informs Ireland's air quality and emissions policy framework.

These pollutants are not considered further in this chapter, as they are not expected to be significantly influenced by the Proposed Development.

The applicable limit values for $NO_2$, $PM_{10}$, and $PM_{2.5}$, $SO_2$, CO and benzene are set out in Table 8-1.

*Table 8-1 Ambient Air Quality Standards and TA Luft*

| Pollutant | Regulation[1] | Limit Type | Value |
|---|---|---|---|
| Dust Deposition | TA Luft (German VDI, 2002) | Annual average limit for nuisance dust | 350 mg/m$^2$/day |
| Nitrogen Dioxide | 2008/50/EC | Annual average limit for nuisance dust | 200 µg/m$^3$ |
| | | Annual limit for protection of human health | 40 µg/m$^3$ |
| NOx | 2008/50/EC | Annual limit for the protection of vegetation | 30 µg/m$^3$ |

[1] EU 2008/50/EC – Clean Air For Europe (CAFÉ) Directive replaces the previous Air Framework Directive (1996/30/EC) and daughter directives 1999/30/EC and 2000/69/EC

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| Pollutant | Regulation[1] | Limit Type | Value |
|---|---|---|---|
| Particulate Matter (as $PM_{10}$) | 2008/50/EC | 24-hour limit for protection of human health - not to be exceeded more than 35 times/year | 50 µg/m³ $PM_{10}$ |
| | | Annual limit for protection of human health | 40 µg/m³ $PM_{10}$ |
| Particulate Matter (as $PM_{2.5}$) – Stage 1 | 2008/50/EC | Annual limit for protection of human health | 25 µg/m³ $PM_{2.5}$ |
| Particulate Matter (as $PM_{2.5}$) – Stage 2[2] | 2008/50/EC | Annual limit for protection of human health | 20 µg/m³ $PM_{2.5}$ |
| Sulphur Dioxide ($SO_2$) | 2008/50/EC | Hourly limit for the protection of human health (not to be exceeded >24 times/year) | 350 µg/m³ |
| | | Daily limit for protection of human health (not to be exceeded >3 times/year) | 125 µg/m³ |
| Carbon Monoxide (CO) | 2008/50/EC | Maximum daily 8-hour mean | 10 mg/m³ |
| Benzene | 2008/50/EC | Annual limit for protection of human health | 5 µg/m³ |

On the 14th of October 2024 the European Parliament and the Council adopted a directive setting updated air quality standards across the EU. The directive aims to improve air quality across the EU by aligning standards with the latest World Health Organisation (WHO) guidelines and reducing air pollution's health impacts by more than 55% by 2030. The directive updates and consolidates previous directives (2004/107/EC and 2008/50/EC) to enhance clarity and effectiveness. This plan is part of the broader European Green Deal and the Zero Pollution Action Plan, targeting significant reductions in air, water, and soil pollution by 2050. The revised directive will also ensure early action, with air quality roadmaps that need to be prepared ahead of 2030 if there is a risk that the new standards will not be attained by that date. The air quality standards will be reviewed regularly in line with latest scientific evidence to assess whether they continue to be appropriate.

Directive (EU) 2024/2881 was published in the EU's Official Journal and entered into force on the 10th of December 2024. Member States have until 10th of December 2026 to transpose the directive into national law. Ireland is required to meet this deadline; however, at the time of writing, a national transposition date has not yet been confirmed.

[2] Stage 2 Indicative limit value for $PM_{2.5}$ to be applied from 1 January 2020 after review by the European Commission

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By 2030, the European Commission will review the air quality standards and every five years thereafter, in line with latest scientific evidence.

At present, the applicable standards for assessing compliance in relation to air quality are those outlined in Table 8-1.

#### *8.2.1.2 Air Quality and Traffic Impact Significance Criteria*

The TII document *Air Quality Assessment of Specified Infrastructure Projects – PE-ENV-01106* (TII, 2022) details a methodology for determining air quality impact significance criteria for road schemes which can be applied to any project that causes a change in traffic. The degree of impact is determined based on the percentage change in pollutant concentrations relative to the 'Do Nothing' scenario. The TII significance criteria are outlined in Table 4.9 of *Air Quality Assessment of Specified Infrastructure Projects – PE-ENV-01106* (TII, 2022) and reproduced in Table 8-2. These criteria have been adopted for the Proposed Development to predict the effect of $NO_2$, $PM_{10}$ and $PM_{2.5}$ emissions as a result of the Proposed Development.

*Table 8-2 Dust Emission Magnitude for the site*

| Long Term Average Concentration at Receptor in Assessment Year | % Change in Concentration Relative to Air Quality Limit Value (AQLV) | | | |
|---|---|---|---|---|
| | 1% | 2-5% | 6-10% | >10% |
| 75% or less of AQLV | Neutral | Neutral | Slight | Moderate |
| 76-94% of AQLV | Neutral | Slight | Moderate | Moderate |
| 95%-102% of AQLV | Slight | Moderate | Moderate | Substantial |
| 95%-102% of AQLV | Moderate | Moderate | Substantial | Substantial |
| 110% or more of AQLV | Moderate | Substantial | Substantial | Substantial |

Source Air Quality Assessment of Specified Infrastructure Projects – PE-ENV-01106 (TII, 2022)

### 8.2.2 Construction Phase

#### *8.2.2.1 Construction Dust Impact Assessment*

The main air quality effects that may arise during demolition and construction activities are:

- Dust deposition, resulting in the soiling of surfaces;
- Visible dust plumes, which are evidence of dust emissions;
- Elevated $PM_{10}$, $PM_{2.5}$ concentrations from demolition and construction activities (including earthworks and trackout); and
- An increase in concentrations of $PM_{10}$, $PM_{2.5}$ and nitrogen dioxide due to exhaust emissions from vehicles and equipment used on site (non-road mobile machinery) and vehicles accessing the site.

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The risk of dust emissions from a demolition/construction site causing loss of amenity and/or health or ecological impacts (and effects) is related to:

- The activities being undertaken (demolition, number of vehicles and plant etc.);
- The duration of these activities; the size of the site;
- The meteorological conditions (wind speed, direction and rainfall);
- The proximity of receptors to the activities;
- The adequacy of the mitigation measures applied to reduce or eliminate dust; and
- The sensitivity of the receptors to dust.

The synoptic meteorological station at Dunsany, Co. Meath is located approximately 27.5km southwest of the Proposed Development; and for the purposes of this chapter, weather data collected here may be considered similar to that which is experienced in the area of the site.

A review of Dunsany meteorological data indicates that the prevailing wind direction is south-westerly, and wind speeds are generally moderate in nature (see Section 8.3.3.2). Moderate to high windspeeds (above 5m/s (7-10 knots)) are most likely to result in fugitive dust emissions. Approximately 41.52% of all hourly data featured winds of below 5m/s. In addition, dust generation is considered negligible on days where rainfall is greater than 0.2mm. According to a review of daily rainfall data from 2007-2024 it can be determined that 40% of the time dust generation will be reduced. The frequency of winds (>5m/s) occurring in a south-westerly direction on dry days is 8.6%. The prevailing meteorological conditions in the vicinity of the site are favourable in general for the suppression of dust.

The 2007–2024 dataset was selected to ensure full calendar years were included in the analysis and to maintain consistency with the wind rose and rainfall assessments. While more recent data is available, it was not used as 2025 is incomplete and would not provide a consistent long-term baseline. As with any impact, the risk will be determined by the magnitude of the source, the effectiveness of the pathway and the sensitivity of the receptor.

The IAQM Guidance on the Assessment of Dust from Demolition and Construction (2024) provides a framework for the assessment of risk.

Activities on construction sites have been divided into four types:

- Demolition;
- Earthworks;
- Construction; and
- Trackout.

The potential for dust emissions is assessed for each activity that is likely to take place.

The assessment methodology considers three separate dust impacts (and effects):

- Annoyance due to dust soiling;
- The risk of health impacts due to an increase in exposure to $PM_{10}$; and
- Harm to ecological receptors with account being taken of the sensitivity of the area that may experience these effects.

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The assessment is used to define appropriate mitigation measures to ensure that there will be no significant effect.

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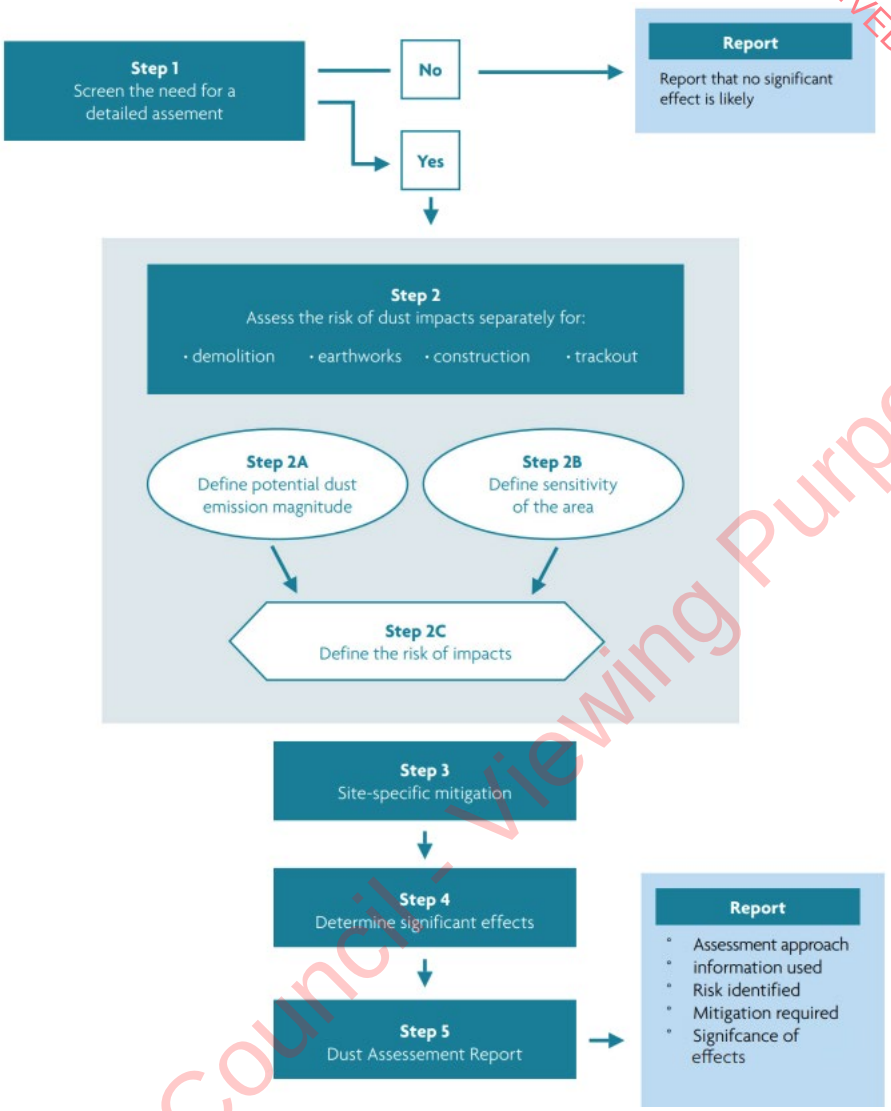



*Figure 8-1 Steps to Perform a Dust Assessment (IAQM, 2024)*

**Step 1 - Screening the Need for a Detailed Assessment**

Step 1 is to screen the requirement for a more detailed assessment. An assessment will normally be required where there is:

- A human receptor within:
  - 250m of the boundary of the site; and/or
  - 50m of the route(s) used by the construction vehicles on the public highway, up to 250m from the site entrance(s).
- An 'ecological receptor' within:
  - 50m of the boundary of the site; and/or
  - 50m of the route(s) used by construction vehicles on the public highway, up to 250m from the site entrance(s).

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A human receptor refers to any location where a person or property may experience the adverse effects of airborne dust or dust-soiling, or exposure to particulate matter ($PM_{10}$) over a period relevant to air quality objectives. An ecological receptor refers to any sensitive habitat that may be affected by dust deposition, including designated sites such as SACs, SPAs, and Sites of Special Scientific Interest (SSSIs).

The screening distances of 50 m and 250 m are based on IAQM guidance and reflect the typical range within which construction dust may cause impacts, depending on site activity and meteorological conditions.

There are >100 human receptors within 250m of the site boundary.

The River Boyne and River Blackwater SAC is located directly north of the site, therefore the requirement for a more detailed assessment has been screened in.

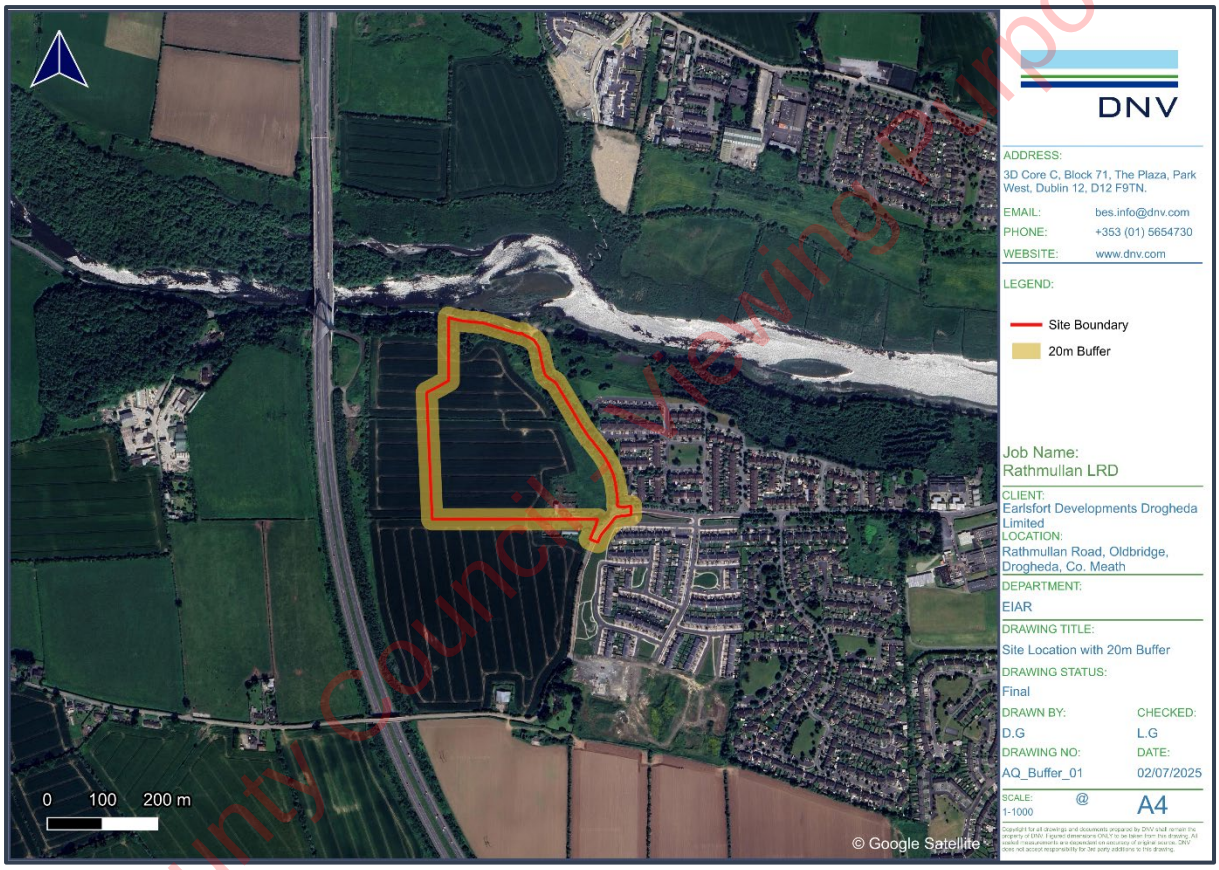



*Figure 8-2 Map Showing 20m Buffer from Site Boundary*

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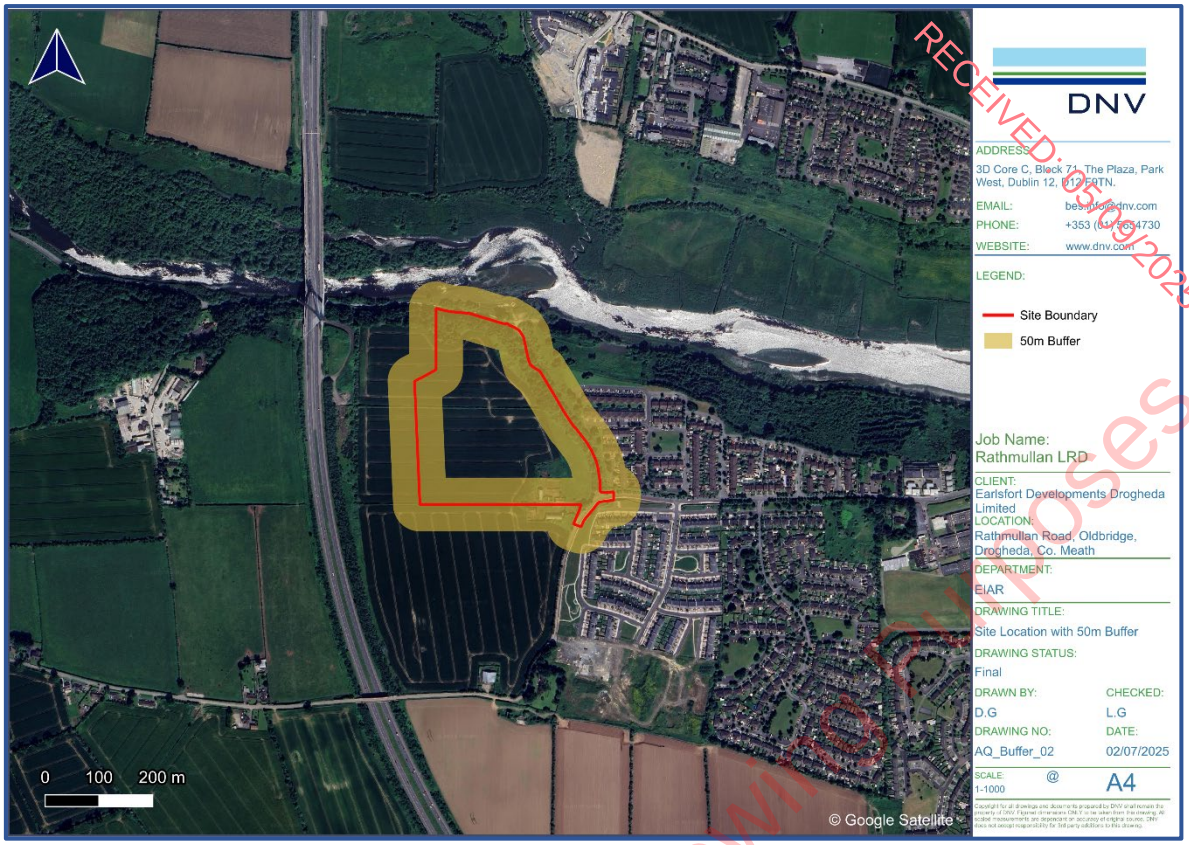



*Figure 8-3 Map Showing 50m Buffer from Site Boundary*

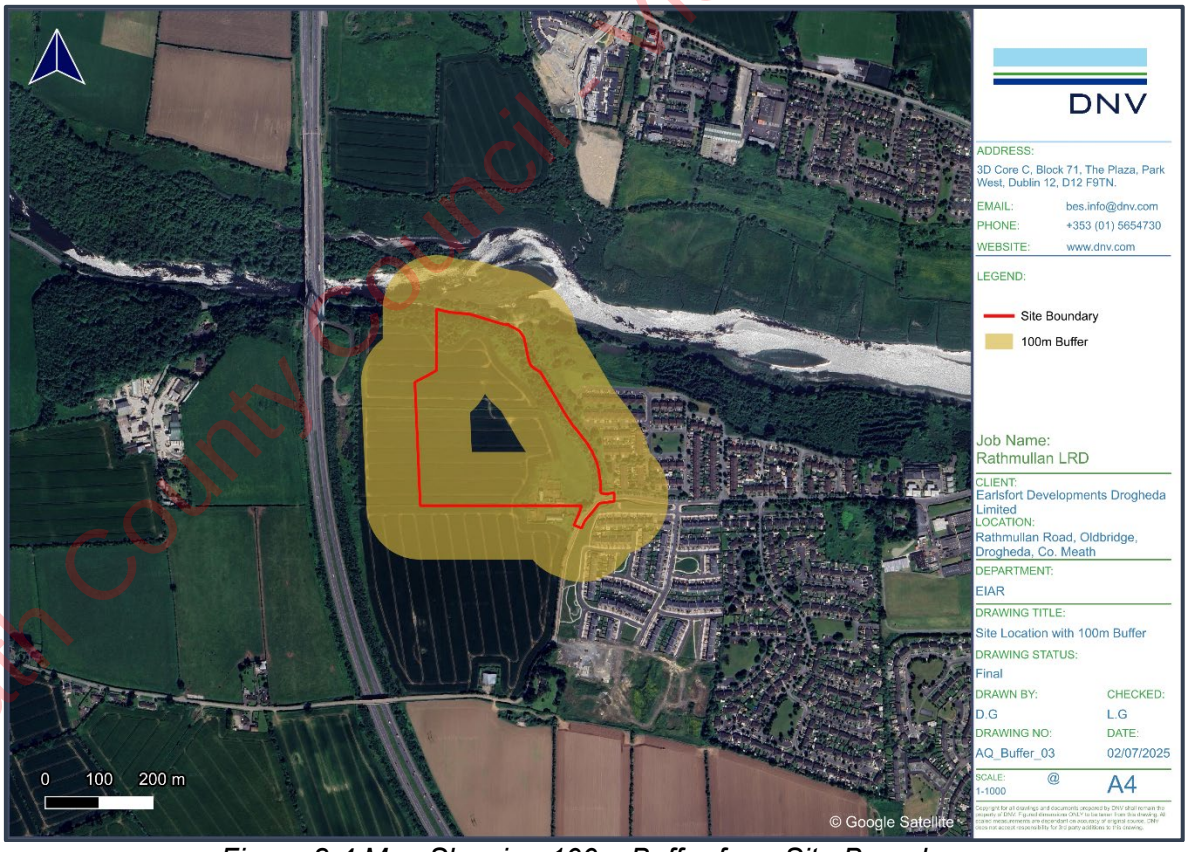



*Figure 8-4 Map Showing 100m Buffer from Site Boundary*

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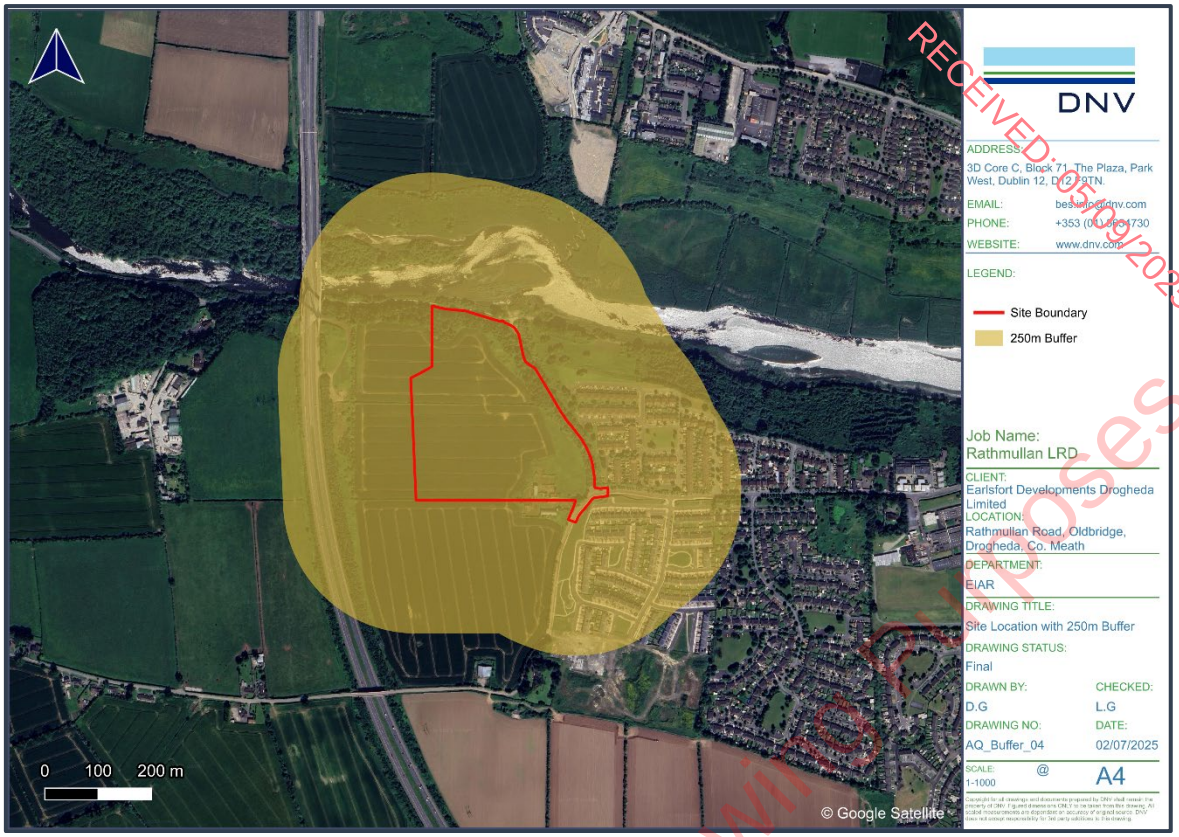



*Figure 8-5 Map Showing 250m Buffer from Site Boundary*

**Step 2 - Assess the Risk of Dust Impacts**

Step 2 is to assess the risk of dust impacts. This is carried out separately for each of the four activities (demolition, earthworks, construction, and trackout). According to the IAQM (2024), the risk of dust arising in sufficient quantities to cause annoyance and/or ecological impacts should be determined using four risk categories: negligible, low, medium and high. A site is allocated to a risk category based on two factors:

- The scale and nature of the works, which determines the potential dust emission magnitude as small, medium and large (Step 2A); and
- The sensitivity of the area to dust impacts (Step 2B), which is defined as low, medium or high sensitivity.

These two factors are combined in Step 2C to determine the risk of dust impacts with no mitigation applied. The risk category assigned to the site can be different for each of the four potential activities (demolition, earthworks, construction and trackout). More than one of these activities may occur on a site at any one time. Risks are described in terms of there being a low, medium and high risk of dust impacts for each of the four separate potential activities. Where there are low, medium and high risks of an impact, then site-specific mitigation will be required, proportionate to the level of risk.

**Step 2A – Define the Potential Dust Emission Magnitude**

The dust emission magnitude is based on the scale of the anticipated works and should be classified as Small, Medium or Large.

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Demolition: Definitions for demolition as follows:

- Large: Total building volume >75,000m$^3$, potentially dusty construction material (e.g. concrete), on-site crushing and screening, demolition activities >12m above ground level;
- Medium: Total building volume 12,000m$^3$ – 75,000m$^3$, potentially dusty construction material, demolition activities 6-12m above ground level; and
- Small: Total building volume 12,000m$^3$, construction material with low potential for dust release (e.g. metal cladding or timber), demolition activities <6m above ground, demolition during wetter months.

The total volume of building to be demolished is 1,603.2m$^3$ and therefore, the dust emission magnitude for demolition is defined as small.

Earthworks: Earthworks will primarily involve excavating material, haulage, topping and stockpiling. Activities such as levelling the site and landscaping works are also considered under this category. The dust emission magnitude from earthworks can be classified as small, medium and large based on the definitions from the IAQM guidance:

- Large: Total site area >110,000m$^2$, potentially dusty soil type (e.g. clay, which will be prone to suspension when dry due to small particle size), >10 heavy earth moving vehicles active at any one time, formation of bunds >6m in height;
- Medium: Total site area 18,000m$^2$ – 110,000m$^2$, moderately dusty soil type (e.g. silt), 5-10 heavy earth moving vehicles active at any one time, formation of bunds 3m – 6m in height; and
- Small: Total site area <18,000m$^2$, soil type with large grain size (e.g. sand), <5 heavy earth moving vehicles active at any one time, formation of bunds >3m in height.

The dust emission magnitude for the proposed earthwork activities can be classified as medium as the total site area is 92,000m$^2$.

Construction: The key issues when determining the potential dust emission magnitude during the construction phase include the size of the building(s)/infrastructure, method of construction, construction materials, and duration of build. The IAQM example definitions for construction are:

- Large: Total building volume >75,000 m$^3$, on site concrete batching, sandblasting;
- Medium: Total building volume 12,000 m$^3$ – 75,000 m$^3$, potentially dusty construction material (e.g. concrete), on site concrete batching; and
- Small: Total building volume <12,000 m$^3$, construction material with low potential for dust release (e.g. metal cladding or timber).

The total building volume to be constructed is 113,814.8m$^3$ therefore, the dust emissions magnitude for construction is large.

Trackout: Factors which determine the dust emission magnitude are vehicle size, vehicle speed, vehicle numbers, geology and duration. As with all other potential sources, professional judgement must be applied when classifying trackout into one of the dust emission magnitude categories. IAQM definitions for trackout are:

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- Large: >50 HDV (>3.5t) outward movements[3] in any one day[4], potentially dusty surface material (e.g. high clay content), unpaved road length >100m;
- Medium: 20-50 HDV (>3.5t) outward movements in any one day, moderately dusty surface material (e.g. high clay content), unpaved road length 50m – 100m; and
- Small: <20 HDV (3.5t) outward movements in any one day, surface material with low potential for dust release, unpaved road length <50m.

These numbers are for vehicles that leave the site after moving over unpaved ground, where they will accumulate mud and dirt that can be tracked out onto the public highway.

The dust emission magnitude for the proposed trackout activities can be classified as medium as Waterman Moylan Consulting Engineers (2025) have anticipated that the highest level of HDV movements will occur during the excavation phase, with an estimated total of 40 outward HDV movements.

Table 8-3 provides a summary of the dust emission magnitude for the site.

*Table 8-3 Dust Emission Magnitude for the site*

| Activity | Dust Emission Magnitude |
|---|---|
| Demolition | Small |
| Earthworks | Medium |
| Construction | Large |
| Trackout | Medium |

**Step 2B – Define the Sensitivity of the Area**

The sensitivity of the area takes account of a number of factors:

- The specific sensitivities of receptors in the area;
- The proximity and number of those receptors;
- In the case of $PM_{10}$, the local background concentration; and
- Site-specific factors, such as whether there are natural shelters, such as trees, to reduce the risk of wind-blown dust.

**Sensitivities of People to Dust Soiling Effects**

For the sensitivity of people and their property to soiling, the IAQM (2024) recommends that the air quality practitioner uses professional judgment to identify where on the spectrum between high and low the sensitivity of a receptor lies, taking into account the following general principles set out in Table 8-4.

[3] A vehicle movement is a one-way journey i.e., from A to B, and excludes the return journey.

[4] HDV movements during the construction project vary over its lifetime, and the number of movements is the maximum, not the average.

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*Table 8-4 Sensitivities of People to Dust Soiling Effects (Source: IAQM, 2024)*

| Sensitivity | Features | Indicative Examples |
|---|---|---|
| High | • Users can reasonably expect enjoyment of a high level of amenity; or<br>• The appearance, aesthetics or value of their property would be diminished by soiling; and<br>• The people or property would reasonably be expected to be present continuously, or at least regularly for extended periods, as part of the normal pattern of the use of the land. | • Dwellings;<br>• Museums and other culturally important collections; and<br>• Medium and long term car parks and show rooms. |
| Medium | • Users would expect to enjoy a reasonable level of amenity, but would not reasonably expect to enjoy the same level of amenity as in their home; or<br>• The appearance, aesthetics or value of their property could be diminished by soiling; or<br>• The people or property wouldn't reasonably be expected to be present here continuously or regularly for extended periods as part of the normal pattern of use of the land. | • Parks; and<br>• Places of work. |
| Low | • The enjoyment of amenity would not reasonably be expected; or<br>• Property would not reasonably be expected to be diminished in appearance, aesthetics or value by soiling; or<br>• There is a transient exposure, where the people or property would reasonably be expected to be present only for limited periods of time as part of the normal pattern of use for the land. | • Playing fields;<br>• Farmland (unless commercially sensitive horticultural);<br>• Footpaths;<br>• Short-term carparks[5]<br>• Places of work. |

### Sensitivities of People to Health Effects of $PM_{10}$

For the sensitivity of people to the health effects of $PM_{10}$, the IAQM (2024) recommends that the air quality practitioner assumes that there are three sensitivities based on whether or not the receptor is likely to be exposed to elevated concentrations over a 24-hour period,

[5] Car parks have a range of sensitivities depending on the duration and frequency that people would be expected to park their cars there, and the level of amenity they could reasonably expect whilst doing so. Car parks associated with workplace or residential parking might have a high level of sensitivity compared to car parks used less frequently and for shorter durations, such as those associated with shopping. Cases should be examined on their own merits.

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consistent with the Defra's advice for local air quality management, Defra LAQM Technical Guidance LAWM.TG (2022).

*Table 8-5 Sensitivities of People to the Health Effects of $PM_{10}$ (Source: IAQM, 2024)*

| Sensitivity | Features | Indicative Examples |
|---|---|---|
| High | • Locations where members of the public are exposed over a time period relevant to the air quality objective for $PM_{10}$ (in the case of the 24-hour objectives, a relevant location would be one where individuals may be exposed for eight hours or more in a day)[6]. | • Residential properties;<br>• Hospitals;<br>• Schools; and<br>• Residential care homes. |
| Medium | • Locations where the people exposed are workers[7], and exposure is over a time period relevant to the air quality objective for $PM_{10}$ (in the case of 24-hour objectives, a relevant location would be one where individuals may be exposed for eight hours or more in a day). | • Office and shop owners.<br>(Workers occupationally exposed to $PM_{10}$ are generally not included as protection is covered by Health and Safety at Work Legislation) |
| Low | • Locations where human exposure is transient[8]. | • Public footpaths;<br>• Playing fields; and<br>• Shopping streets. |

**Sensitivities of Receptors to Ecological Effects**

Dust deposition due to demolition, earthworks, construction and trackout has the potential to affect sensitive habitats and plant communities.

Dust can have two types of effect on vegetation: physical and chemical. Direct physical effects include reduced photosynthesis, respiration and transpiration through smothering. Chemical changes to soils or watercourses may lead to a loss of plants or animals for example via changes in acidity. Indirect effects can include increased susceptibility to stresses such as

[6] This follows Defra guidance as set out in LAQM.TG (2022)

[7] Notwithstanding the fact that the air quality objectives and limit values do not apply to people in the workplace, such people can be affected by the exposure of $PM_{10}$. However, they are considered to be less sensitive than the general public as a whole because those most sensitive to the effects of air pollution, such as young children are not normally workers. For this reason workers have been included in the medium sensitivity category.

[8] There are no standards that apply to short-term exposure, e.g. one or two hours, but there is still a risk of health impacts, albeit less certain.

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pathogens and air pollution. These changes are likely to occur only as a result of long-term demolition and construction works adjacent to a sensitive habitat.

An AA Screening and NIS have been prepared for the Proposed Development. These assessments concluded that, with the implementation of standard mitigation measures, the Proposed Development will not result in significant adverse effects on the integrity of the designated sites.

Accordingly, any dust-related ecological impacts are expected to be temporary and reversible once construction activities cease.

Table 8-6 provides an example of possible sensitivities:

*Table 8-6 Sensitivities of Receptors to Ecological Effects*

| Sensitivity | Features | Indicative Examples |
|---|---|---|
| High | • Locations with an international designation and the designated features may be affected by dust soiling; or<br>• Locations where there is a community of a particularly dust sensitive species such as vascular species included in the Red Data List for Ireland.[9] | • A Special Area of Conservation (SAC) designated for acid heathlands, or a local site designated for lichens adjacent to the demolition of a large site containing (alkali) buildings). |
| Medium | • Locations where there is a particularly important plant species, where its dust sensitivity is uncertain or unknown; or<br>• Locations with a national designation where the features may be affected by dust deposition. | • A Site of Special Scientific Interest (SSSI) with dust sensitive features. |
| Low | • Locations with a local designation where the features may be affected by dust deposition. | • A local Nature Reserve with dust sensitive features. |

Table 8-7 – Table 8-9 which are reproduced directly from the IAQM guidance, illustrate how the sensitivity of the area may be determined for dust soiling, human health impacts and ecological impacts, respectively. These tables provide the methodology that has been applied to the Proposed Development. It should be noted thatin line with IAQM recommendations, the highest sensitivity identified from each table has been considered in the assessment.

[9] A Habitat Regulation Assessment of the site may be required as part of the planning process, if the site lies close to an internationally designated site i.e., Special Conservation Areas (SACs), Special Protection Areas (SPAs) designated under the Habitats Directive (92/43/EEC) and RAMSAR sites.

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The criteria detailed in Table 8-7 – Table 8-9 were used to determine the sensitivity of the area to dust soiling effects, human health and ecological impacts for the Proposed Development.

*Table 8-7 Sensitivity of Dust Soiling Effects on People and Property*

| Receiver Sensitivity | Number of Receivers | Distance from the Source (m) | | | |
|---|---|---|---|---|---|
| | | <20m | <50m | <100m | <250m |
| High | >100 | High | High | Medium | Low |
| | 10-100 | High | Medium | Low | Low |
| | 1-10 | Medium | Low | Low | Low |
| Medium | >1 | Medium | Low | Low | Low |
| Low | >1 | Low | Low | Low | Low |

*Table 8-8 Sensitivity of the Area to Human Health Impacts*

| Receptor Sensitivity | Annual Mean $PM_{10}$ concentration | Number of Receptors | Distance from the Source (m) | | | |
|---|---|---|---|---|---|---|
| | | | <20 | <50 | <100 | <250 |
| High | >32 µg/m$^3$ | >100 | High | High | High | Medium |
| | | 10-100 | High | High | Medium | Low |
| | | 1-10 | High | Medium | Low | Low |
| | 28-32 µg/m$^3$ | >100 | High | High | Medium | Low |
| | | 10-100 | High | Medium | Low | Low |
| | | 1-10 | High | Medium | Low | Low |
| | 24-28 µg/m$^3$ | >100 | High | Medium | Low | Low |
| | | 10-100 | High | Medium | Low | Low |
| | | 1-10 | Medium | Low | Low | Low |
| | <24 µg/m$^3$ | >100 | Medium | Low | Low | Low |
| | | 10-100 | Low | Low | Low | Low |
| | | 1-10 | Low | Low | Low | Low |
| Medium | >32 µg/m$^3$ | >100 | High | Medium | Low | Low |
| | | 10-100 | Medium | Low | Low | Low |
| | | 1-10 | Medium | Low | Low | Low |
| | 28-32 µg/m$^3$ | >100 | Low | Low | Low | Low |
| | | 10-100 | Low | Low | Low | Low |
| | | 1-10 | Low | Low | Low | Low |
| | 24-28 µg/m$^3$ | >100 | Low | Low | Low | Low |
| | | 10-100 | Low | Low | Low | Low |
| | | 1-10 | Low | Low | Low | Low |
| | <24 µg/m$^3$ | >100 | Low | Low | Low | Low |
| | | 10-100 | Low | Low | Low | Low |
| | | 1-10 | Low | Low | Low | Low |
| Low | - | ≥1 | Low | Low | Low | Low |

*Table 8-9 Sensitivity of the Area to Ecological Impacts*

| Receptor Sensitivity | Distance from the Source (m) | |
|---|---|---|
| | <20 | <50 |
| High | High | Medium |
| Medium | Medium | Low |
| Low | Low | Low |

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### Step 2C – Define the Risk of Impacts

In accordance with the IAQM Guidance, the dust emission magnitude (Step 2A) and sensitivity of the area (Step 2B) have been combined and the risk of impacts from demolition, construction, earthworks and trackout have been determined (before mitigation is applied).

Table 8-10 to 8-13 illustrate how the dust emission magnitude should be combined with the sensitivity of the area to determine the risk with no mitigation measures applied.

*Table 8-10 Risk of Dust - Demolition*

| Potential Impact | Dust Emission Magnitude | | |
|---|---|---|---|
| | Large | Medium | Small |
| High | High Risk | Medium Risk | Medium Risk |
| Medium | High Risk | Medium Risk | Low Risk |
| Low | Medium Risk | Low Risk | Negligible |

*Table 8-11 Risk of Dust – Earthworks*

| Potential Impact | Dust Emission Magnitude | | |
|---|---|---|---|
| | Large | Medium | Small |
| High | High Risk | Medium Risk | Low Risk |
| Medium | Medium Risk | Medium Risk | Low Risk |
| Low | Low Risk | Low Risk | Negligible |

*Table 8-12 Risk of Dust – Construction*

| Potential Impact | Dust Emission Magnitude | | |
|---|---|---|---|
| | Large | Medium | Small |
| High | High Risk | Medium Risk | Low Risk |
| Medium | Medium Risk | Medium Risk | Low Risk |
| Low | Low Risk | Low Risk | Negligible |

*Table 8-13 Risk of Dust – Trackout*

| Potential Impact | Dust Emission Magnitude | | |
|---|---|---|---|
| | Large | Medium | Small |
| High | High Risk | Medium Risk | Low Risk |
| Medium | Medium Risk | Low Risk | Negligible |
| Low | Low Risk | Low Risk | Negligible |

The risk of dust impacts is based on the potential dust emissions magnitude and the sensitivity of the area. These two factors are then combined to determine the risk of dust impacts with no mitigation applied. For the Proposed Development, site-specific information has been used to inform the assessment, allowing for a more accurate determination of risk.

The risk of dust soiling, the effect on human health and the risk of ecological effects before mitigation, is summarised in Section 8.5.1.

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#### *8.2.2.2 Construction Phase Traffic Emissions*

Construction phase traffic has the potential to affect air quality. The TII guidance *Air Quality Assessment of Specified Infrastructure Projects – PE-ENV-01106* (TII, 2022), states that road links meeting one or more of the following criteria can be defined as being 'affected' by a proposed development and should be included in the local air quality assessment. While the guidance is specific to infrastructure projects the approach can be applied to any development that causes a change in traffic.

- Annual average daily traffic (AADT) changes by 1,000 or more;
- Heavy duty vehicle (HDV) AADT changes by 200 or more;
- Daily average speed change by 10 km/h or more;
- Peak hour speed change by 20 km/h or more; or
- A change in road alignment by 5m or greater.

The construction stage traffic will not change by more than 1,000 AADT or 200 HDV AADT and does not meet the above scoping criteria. In addition, there are no proposed changes to the traffic speeds or road alignment. As a result, in accordance with TII guidance, a detailed air assessment of construction stage traffic emissions has been scoped out. This is considered a proportionate and appropriate approach, and no further assessment or precautionary measures are required.

### 8.2.3 Operational Phase

Operational phase traffic has the potential to affect local air quality as a result of increased vehicle movements associated with the Proposed Development. The TII scoping criteria detailed in Section 8.2.2.2 were used to determine if any road links are affected by the Proposed Development and require inclusion in a detailed air quality modelling assessment. The Proposed Development will result in the operational phase traffic increasing by more than 1,000 AADT on 2 no. road links. Therefore, a detailed air quality modelling assessment of operational phase traffic emissions was conducted.

The effect on air quality due to changes in traffic is assessed at sensitive receptors in the vicinity of affected roads. The receptor locations are discussed in further detail within Section 8.2.3.2.

The TII guidance (TII, 2022) states that modelling should be conducted for $NO_2$, $PM_{10}$ and $PM_{2.5}$ for the Base, Opening and Design Years for both the Do Minimum (Do Nothing) and Do Something scenarios. Modelling of operational $NO_2$, $PM_{10}$ and $PM_{2.5}$ concentrations has been conducted for the Do Nothing and Do Something scenarios using the TII Road Emissions Model (REM) online calculator tool (TII, 2025).

The following inputs are required for the REM tool:

- Receptor locations;
- Light duty vehicle (LDV) annual average daily traffic movements (AADT);
- Annual average daily heavy duty vehicles (HDV AADT);
- Annual average traffic speeds;

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- Road link lengths;
- Road type;
- Project county location; and
- Pollutant background concentrations.

The *Default* fleet mix option was selected along with the *Intermediate Case* fleet data base selection, in accordance with TII Guidance (Air Quality Modelling for National Road Projects,TII, 2024). The *Intermediate Case* represents a midpoint between two scenarios outlined in the guidance, the *Business as Usual* case, which assumes current trends in vehicle ownership and fuel types continue, and the *Climate Action Plan (CAP)* case, which assumes full implementation of national climate targets, including widespread adoption of electric and low-emission vehicles.

It assumes a liner interpolation between these two scenarios and is intended to provide a balanced and realistic projection of future fleet composition.

This approach is considered appropriate for the Proposed Development, as it reflects national policy direction while avoiding overly conservative or optimistic assumptions.

Using this input data, the model predicts the road traffic contribution to ambient ground level concentrations at the identified sensitive receptors using generic meteorological data. The TII REM uses county-based Irish fleet composition for different road types, for different European emission standards from pre-Euro to Euro 6/VI with scaling factors to reflect improvements in fuel quality, retrofitting, and technology conversions. The TII REM also includes emission factors for $PM_{10}$ emissions associated with brake and tire wear (TII, 2024). The predicted road contributions are then added to the existing background concentrations to give the predicted ambient concentrations. The ambient concentrations are then compared with the relevant ambient air quality standards to assess the compliance of the Proposed Development with these ambient air quality standards.

#### *8.2.3.1 Traffic Data Used in Modelling Assessment*

Traffic flow information was obtained from Waterman Moylan Consulting Engineers (2025) for the purposes of this assessment. A full copy of the annual average daily traffic (AADT) generated during the operational phase of the Proposed Development can be found in Appendix 8-1. Two different year scenarios are presented in Table 8-14 for the operational phase vehicle trip generation data. The ‘Do Nothing’ and ‘Do Something’ scenarios for the Opening Year (2028) and Design Year (2043), which is Opening Year plus 15 years, as per TII Guidance. These scenarios have been used to assess the potential traffic-related impacts of the Proposed Development during its operational phase.

The traffic data are detailed in Table 8-14. 3 no. road links met the TII scoping criteria and were within 200m of receptors, therefore, these links were included in the modelling assessment. Background concentrations have been included as per Section 8.3.1 of this chapter based on available EPA background monitoring data (EPA, 2025).

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*Table 8-14 Traffic Data Used in Air Modelling Assessment*

| Link Number | Road Name | Opening Year (2028) | | Design Year (2043) | | Speed (Km/h) | Link Length |
|---|---|---|---|---|---|---|---|
| | | Do Nothing | Do Something | Do Nothing | Do Something | | |
| | | AADT | AADT | AADT | AADT | | |
| 1 | Site Access Road (W) | - | 1,804 (0% HGV) | 2,175 (0% HGV) | 3,979 (0% HGV) | 30 | 30 |
| 2 | Rathmullan Road (E) | 1,843 (0% HGV) | 3,603 (0% HGV) | 5,606 (0% HGV) | 7,366 (0% HGV) | 50 | 100 |
| 3 | Rathmullan Road (W) | 9,500 (0.45% HGV) | 11,054 (0.45% HGV) | 13,595 (0.45% HGV) | 15,148 (0.45% HGV) | 50 | 100 |

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#### *8.2.3.2 Sensitive Receptors*

The effect on air quality as a result of changes in traffic is assessed at sensitive receptors in the vicinity of affected roads. The TII guidance (TII, 2022) states a proportionate number of representative receptors which are located in areas which will experience the highest concentrations or greatest improvements as a result of the Proposed Development are to be included in the modelling. The TII criteria state that receptors within 200m of affected road links should be assessed; roads which are greater than 200m from receptors will not affect pollutant concentrations at that receptor. The TII guidance (TII, 2022) defines sensitive receptor for the purposes of modelling annual mean pollutant concentrations as residential housing, schools, hospitals, care homes and short term-accommodation such as hotels, i.e. locations where members of the public are likely to be regularly present for 24 hours.

For the purpose of determining local air quality effects, four receptors were included in this modelling assessment and have been identified. The receptors modelled will represent the worst-case location in the vicinity of the Proposed Development and were chosen based on proximity (within 200m) to the road links affected by the Proposed Development:

*Table 8-15 Sensitive Receptors*

| Name | Type | ITM Coordinates | |
|---|---|---|---|
| | | X | Y |
| R1 | Residential | 706344 | 775049 |
| R2 | Residential | 706387 | 775111 |
| R3 | Residential | 706522 | 775092 |
| R4 | Residential | 707235 | 775137 |

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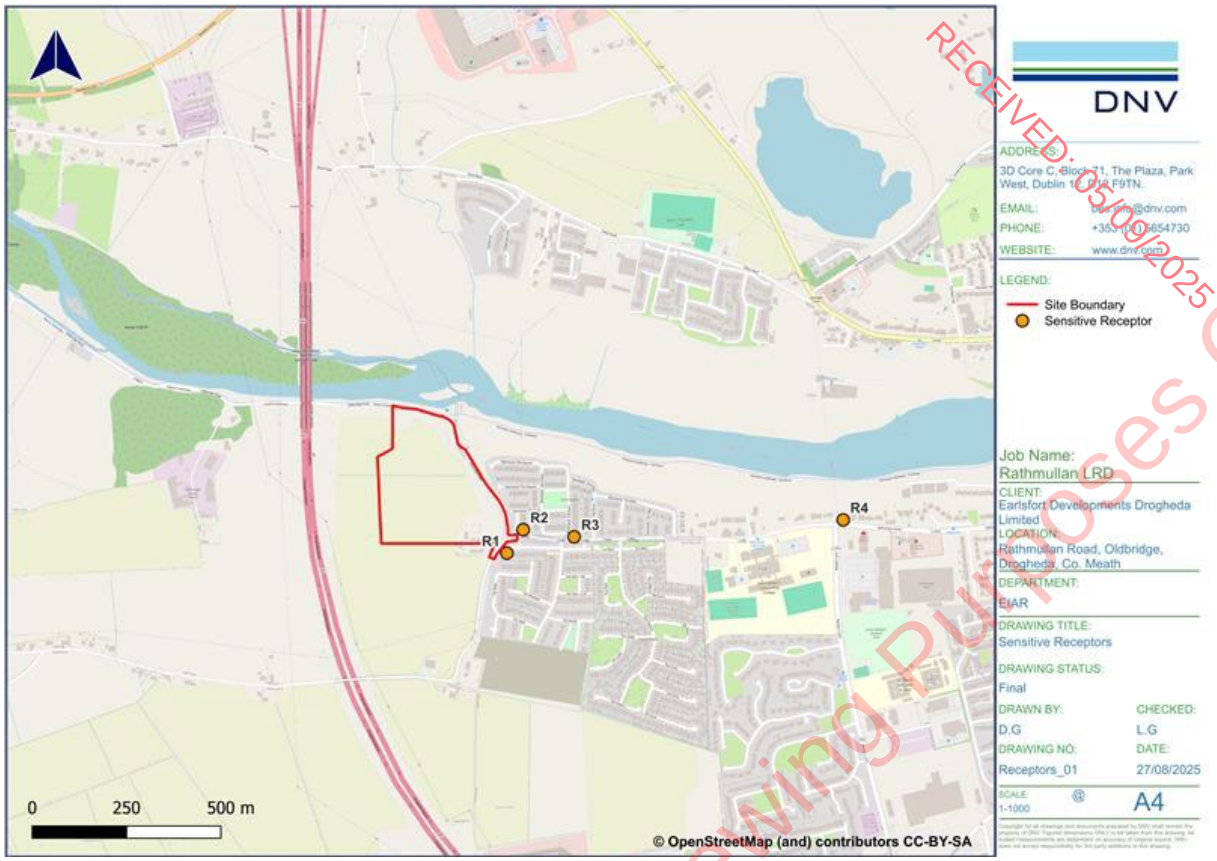



*Figure 8-6 Road Traffic Emissions Sensitive Receptors*

The modelling results are discussed in Section 8.5 of this chapter.

#### 8.2.3.2.1 Air Quality Impacts on Sensitive Ecology

In addition to assessing the effect to people as a result of air quality, the effect on sensitive ecosystems must also be assessed as per the TII guidelines (TII, 2022; 2024). The EC Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora (the *'Habitats Directive'*) requires an Appropriate Assessment to be carried out where there is likely to be a significant effect upon a European protected site. TII requires the Air Quality Specialist to liaise with an ecologist on schemes where there is a European protected site within 2km of the Proposed Development site. However, as the potential effect of a scheme is limited to local level, detailed consideration need only be given to roads where there is a significant change to traffic flows and the designated site lies within 200m of the road centre line. Where these two requirements are fulfilled, the assessment involves a calculation of nitrogen oxides (NOx) and ammonia ($NH_3$) concentrations to determine the Nitrogen deposition and acid deposition rates using the methodology set out in TII Guidance document PE-ENV-01106 (TII, 2022).

Sections of the River Boyne and Blackwater SAC (Site Code: 002299) are within 200m of the link roads impacted by the Proposed Development. Therefore, an assessment of air quality impacts to ecology was carried out within sections of these sites closest to the impacted roads.

The TII REM was used to calculate the $NO_X$ and $NH_3$ concentrations and N deposition and acid deposition rates within the sections of the identified ecological sites that are within closest

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proximity to the road alignments. Pollutant concentrations will be greatest closest to the road, with concentrations decreasing with increased distance from the road. Therefore, by assessing the impact at the point within the designated site that is closest to the road, the worst-case impact can be determined. The inputs into the REM are the same as those outlined for the local air quality assessment. Modelling of the Opening Year 2028 and the Design Year 2043 was conducted for both the Do Nothing and Do Something scenarios in order to determine the degree of change in air quality.

Impacts in relation to $NO_X$ concentrations were compared against the annual mean ambient air quality standard of 30 µg/m$^3$ for the protection of ecology. Impacts in relation to $NH_3$ concentrations were compared against the annual mean limit value of 3 µg/m$^3$. The impact of N and acid deposition were assessed using the criteria in Table 8-16 which are based on Table 3.24 of PE-ENV-01107.

Background $NO_X$ and $NH_3$ concentrations as well as background N deposition and acid deposition rates for the area of the River Boyne and Blackwater SAC within the study area were determined using the Air Pollution Information System (APIS) web GIS based portal (CEH, 2022). The APIS site was also used to determine the relevant critical loads for various habitat types within the designated sites. The critical loads for the sensitive habitat types within the designated sites are detailed in Table 8-17. The critical load ranges for the most sensitive habitat or species were used in the current assessment as a conservative approach regardless of whether the sensitive habitat or species was present in the impacted location.

*Table 8-16 Significance of Effects on Sensitive Designated Habitats*

| Description of Results | Significance |
|---|---|
| Total N deposition and acid deposition are more than 1% of the critical load | Discuss further with project biodiversity practitioners |
| The total N deposition and acid deposition are less than 1% of the critical load | Not significant |

Source: PE-ENV-01107 Air Quality Assessment Standard for Proposed National Roads, Table 3.24 (TII, 2024).

*Table 8-17 Critical Load*

| Pollutant | Designated Site | Potential Sensitive Ecology Present for Determining Critical Load | Critical Load Range |
|---|---|---|---|
| N Deposition | River Boyne and Blackwater SAC | Alkaline Fens [7230]; Alluvial Forests [91E0] | 10–20 kg N/ha/yr (Alkaline Fens);<br>10–15 kg N/ha/yr (Alluvial Forests) |
| Acid Deposition | River Boyne and Blackwater SAC | Alkaline Fens [7230]; Alluvial Forests [91E0] | Acid deposition data was not available via APIS for this site. Therefore, this assessment focuses on nitrogen deposition and associated impacts. Acid deposition impacts are |

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| Pollutant | Designated Site | Potential Sensitive Ecology Present for Determining Critical Load | Critical Load Range |
|---|---|---|---|
| | | | acknowledged as a potential concern for these habitats, but could not be quantified due to data limitations. |

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## 8.3 The Existing and Receiving Environment (Baseline Situation)

The site of the Proposed Development is located 2.5km to the west of Drogheda town centre, within the southwest environs of Drogheda, Co. Meath. The site comprises a greenfield area extending to 9.20 ha, consisting of open fields used for agriculture.

Drogheda is designated as a Regional Growth Centre under the National Planning Framework. A Joint Urban Area Plan (UAP) for Drogheda is currently being prepared by Meath and Louth County Councils to guide future development and environmental management. While still in draft form, the UAP provides strategic context for the town's growth, which may be relevant to future assessments of air quality and infrastructure.

### 8.3.1 Air Quality

Air quality monitoring programs have been undertaken in recent years by the EPA. The most recent annual report on air quality in Ireland is *"Air Quality In Ireland 2023"* (EPA, 2024). The EPA website details the range and scope of monitoring undertaken throughout Ireland and provides both monitoring data and the results of previous air quality assessments (EPA, 2025).

As part of the implementation of the Framework Directive on Air Quality (1996/62/EC) four air quality zones have been defined in Ireland by the EPA for air quality management and assessment purposes.

The main areas defined in each zone are:

- **Zone A:** Dublin Conurbation
- **Zone B:** Cork Conurbation
- **Zone C:** Other cities and large towns comprising Limerick, Galway, Waterford, Drogheda, Dundalk, Bray, Navan, Ennis, Tralee, Kilkenny, Carlow, Naas, Sligo, Newbridge, Mullingar, Wexford, Letterkenny, Athlone, Celbridge, Clonmel, Balbriggan, Greystones, Leixlip and Portlaoise.
- **Zone D:** Rural Ireland, i.e., the remainder of the State excluding Zones A, B and C.

The site is located on the outskirts of the village of southwestern environs of Drogheda, Co. Meath and falls into 'Zone C' of Ireland which is described by the EPA as 'Other cities and large towns comprising Limerick, Galway, Waterford, Drogheda, Dundalk, Bray, Navan, Ennis, Tralee, Kilkenny, Carlow, Naas, Sligo, Newbridge, Mullingar, Wexford, Letterkenny, Athlone, Celbridge, Clonmel, Balbriggan, Greystones, Leixlip and Portlaoise'. It is expected that existing ambient air quality in the vicinity of the Site is characteristic of a suburban location with the primary source of air emissions such as particulate matter, $NO_2$, and hydrocarbons likely to be the result of traffic and domestic fuel burning.

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The EPA launched a national air quality forecast in November 2023, to provide greater information to the public regarding expected air quality in Ireland for up to three days - "Today", "Tomorrow" and the "Day after Tomorrow".

Forecasts include daily Air Quality Index for Health (AQIH), Particulate Matter (PM), nitrogen dioxide ($NO_2$) and ozone ($O_3$). PM, $NO_2$ and $O_3$ are the three main air pollutants impacting human health in Ireland. All pollutants mapped are presented on the Air Quality Index for Health (AQIH) scale (1 – 10). The forecast maps are uploaded twice daily, once in the morning and once in the evening.

In conjunction with individual local authorities, the EPA undertakes ambient air quality monitoring at specific locations throughout the country in the urban and rural environment; an Air Quality Report based on data from monitoring stations and a number of mobile air quality units is developed on an annual basis. The EPA's most recent publication 'Air Quality in Ireland, 2023' reports the quality of the air in Ireland based on the data from the National Ambient Air Quality Monitoring Network throughout the year 2023 (EPA, 2024).

When assessing air quality, the EPA focuses on two main pollutants: particulate matter and nitrogen oxides. Measured concentrations of $NO_2$ for the years 2022 and 2023 are presented in Table 8-18 for Zone C monitoring stations.

*Table 8-18 Concentrations of $NO_2$ at Zone C Monitoring Stations*

| Station | Objective | Concentration (µg/m³) | | Limit or Threshold Value |
|---|---|---|---|---|
| | | 2022 | 2023 | |
| **Meath Navan** | Annual Mean $NO_2$[10] | 21.0 | 22.2 | 40 µg/m³ |
| | Days >200µg/m³ | 0 | 0 | 35 days |
| **Waterford Brownes Road** | Annual Mean $NO_2$ | 7.3 | 6.9 | 40 µg/m³ |
| | Days >200µg/m³ | 0 | 0 | 35 days |
| **Waterford Port** | Annual Mean $NO_2$ | - | 18.3 | 40 µg/m³ |
| | Days >200µg/m³ | - | 2 | 35 days |
| **Sligo**[11] | Annual Mean $NO_2$ | - | - | 40 µg/m³ |
| | Days >200µg/m³ | - | - | 35 days |
| | Annual Mean $NO_2$ | 15.2 | 13.5 | 40 µg/m³ |

[10] $NO_2$ annual mean limit value for the protection of human health: 40 µg/m³ per station

[11] There is no data for Sligo in 2022 and 2023 due to operational issues

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| Station | Objective | Concentration (µg/m³) | | Limit or Threshold Value |
|---|---|---|---|---|
| | | 2022 | 2023 | |
| **Limerick Henry Street** | Days >200µg/m³ | 0 | 0 | 35 days |
| **Limerick People's Park** | Annual Mean $NO_2$ | - | 9.0 | 40 µg/m³ |
| | Days >200µg/m³ | - | 0 | 35 days |
| **Kilkenny Seville Lodge** | Annual Mean $NO_2$ | 4.8 | 4.4 | 40 µg/m³ |
| | Days >200µg/m³ | 0 | 0 | 35 days |
| **Portlaoise** | Annual Mean $NO_2$ | 9.0 | 8.3 | 40 µg/m³ |
| | Days >200µg/m³ | 0 | 0 | 35 days |
| **Dundalk** | Annual Mean $NO_2$ | 10.4 | 9.3 | 40 µg/m³ |
| | Days >200µg/m³ | 1 | 1 | 35 days |
| **Galway Eyre Square** | Annual Mean $NO_2$ | 17.6 | 16.9 | 40 µg/m³ |
| | Days >200µg/m³ | 0 | 0 | 35 days |

Based on the data summarised in Table 8-18, existing baseline air quality for the area in which the site is located can be characterised as being of good quality with no exceedances of the Air Quality Regulations limit values of specific pollutants. The results show that current levels of $NO_2$ are well below the annual mean and 1-hour maximum limit values. In the year 2022, annual mean concentrations of $NO_2$ ranged from 4.8 – 21.0 ug/m³ across all Zone C stations, with no exceedance of the maximum hourly limit (EPA, 2023). In the year 2023, annual mean concentrations of $NO_2$ ranged from 4.4 – 22.2 ug/m³ across all Zone C stations, with no exceedance of the maximum hourly limit (EPA, 2024).

The average concentration of $NO_2$ in 2023 was 12.1 µg/m³. EPA 2023 background concentrations have been used in combination with correction factors to estimate annual average $NO_2$ concentrations in the region of the Proposed Development for the base year (2024). These factors have been adapted from both TII (2011) and the UK Department for Environment, Food and Rural Affairs (DEFRA) roadside $NO_2$ projection factors. While developed for UK conditions, DEFRA's projection factors are commonly used in Irish assessments where localised projection tools are not available. Based on these correction factors, the current estimated $NO_2$ concentration in the region of the Proposed Development is 11.4 µg/m³.

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Measured concentrations of $PM_{10}$ for the years 2022 and 2023 are presented in Table 8-19 for Zone C monitoring stations.

*Table 8-19 Concentrations of $PM_{10}$ at Zone C Monitoring Stations*

| Station | Objective | Concentration (µg/m³) | | Limit or Threshold Value |
|---|---|---|---|---|
| | | 2022 | 2023 | |
| **Portlaoise** | Annual Mean $PM_{10}$[12] | 12.0 | 11.0 | 40 µg/m³ |
| | Days >50µg/m³[13] | 0 | 0 | 35 days |
| **Ennis** | Annual Mean $PM_{10}$ | 20.0 | 16.4 | 40 µg/m³ |
| | Days >50µg/m³ | 21 | 11 | 35 days |
| **Sligo**[14] | Annual Mean $PM_{10}$ | - | - | 40 µg/m³ |
| | Days >50µg/m³ | - | - | 35 days |
| **Galway Rahoon** | Annual Mean $PM_{10}$ | 12.6 | 12.7 | 40 µg/m³ |
| | Days >50µg/m³ | 0 | 0 | 35 days |
| **Galway Briarhill** | Annual Mean $PM_{10}$ | 14.2 | 12.1 | 40 µg/m³ |
| | Days >50µg/m³ | 0 | 0 | 35 days |
| **Ballinasloe**[15] | Annual Mean $PM_{10}$ | - | 13.7 | 40 µg/m³ |
| | Days >50µg/m³ | - | 1 | 35 days |
| **Clonmel** | Annual Mean $PM_{10}$ | 11.0 | 9.3 | 40 µg/m³ |
| | Days >50µg/m³ | 1 | 1 | 35 days |
| **Claremorris** | Annual Mean $PM_{10}$ | 7.9 | 8.1 | 40 µg/m³ |
| | Days >50µg/m³ | 0 | 0 | 35 days |

[12] $PM_{10}$ annual mean limit value for the protection of human health: 40 µg/m³ per station

[13] $PM_{10}$ daily limit for the protection of human health: No more than 35 days in a year >50 µg/m³ per station

[14] There is no data for Sligo for 2022 or 2023 due to operational issues

[15] Station newly added in 2023, therefore low data capture for Ballinasloe in 2023

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| Station | Objective | Concentration (µg/m³) | | Limit or Threshold Value |
|---|---|---|---|---|
| | | 2022 | 2023 | |
| **Dundalk** | Annual Mean $PM_{10}$ | 12.3 | 13.2 | 40 µg/m³ |
| | Days >50µg/m³ | 2 | 1 | 35 days |
| **Carlow Town** | Annual Mean $PM_{10}$ | 11.3 | 10.1 | 40 µg/m³ |
| | Days >50µg/m³ | 0 | 0 | 35 days |
| **Waterford Brownes Road** | Annual Mean $PM_{10}$ | 15.2 | 12.2 | 40 µg/m³ |
| | Days >50µg/m³ | 3 | 1 | 35 days |
| **Waterford Port** | Annual Mean $PM_{10}$ | - | 14.0 | 40 µg/m³ |
| | Days >50µg/m³ | - | 3 | 35 days |
| **Navan** | Annual Mean $PM_{10}$ | 14.2 | 13.2 | 40 µg/m³ |
| | Days >50µg/m³ | 1 | 0 | 35 days |
| **Kilkenny Seville Lodge** | Annual Mean $PM_{10}$ | 17.5 | 13.9 | 40 µg/m³ |
| | Days >50µg/m³ | 2 | 0 | 35 days |
| **Letterkenny** | Annual Mean $PM_{10}$ | 14.2 | 13.4 | 40 µg/m³ |
| | Days >50µg/m³ | 6 | 3 | 35 days |
| **Wexford Town** | Annual Mean $PM_{10}$ | 14.5 | 12.7 | 40 µg/m³ |
| | Days >50µg/m³ | 5 | 1 | 35 days |
| **Limerick Henry Street** | Annual Mean $PM_{10}$ | 13.9 | 11.3 | 40 µg/m³ |
| | Days >50µg/m³ | 2 | 0 | 35 days |
| **Limerick People's Park** | Annual Mean $PM_{10}$ | 13.9 | 11.4 | 40 µg/m³ |
| | Days >50µg/m³ | 2 | 0 | 35 days |

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| Station | Objective | Concentration (µg/m³) | | Limit or Threshold Value |
|---|---|---|---|---|
| | | 2022 | 2023 | |
| Athlone | Annual Mean $PM_{10}$ | 12.3 | 11.6 | 40 µg/m³ |
| | Days >50µg/m³ | 3 | 1 | 35 days |
| Tralee | Annual Mean $PM_{10}$ | 17.9 | 14.5 | 40 µg/m³ |
| | Days >50µg/m³ | 14 | 2 | 35 days |
| Drogheda | Annual Mean $PM_{10}$ | 11.9 | 10.9 | 40 µg/m³ |
| | Days >50µg/m³ | 0 | 0 | 35 days |
| Naas | Annual Mean $PM_{10}$ | 12.3 | 10.9 | 40 µg/m³ |
| | Days >50µg/m³ | 2 | 1 | 35 days |
| Greystones | Annual Mean $PM_{10}$ | 11.6 | 10.7 | 40 µg/m³ |
| | Days >50µg/m³ | 0 | 0 | 35 days |
| Bray | Annual Mean $PM_{10}$ | 10.0 | 10.5 | 40 µg/m³ |
| | Days >50µg/m³ | 0 | 2 | 35 days |
| Leixlip | Annual Mean $PM_{10}$ | 11.2 | 10.1 | 40 µg/m³ |
| | Days >50µg/m³ | 1 | 0 | 35 days |

As is evident from the results shown in Table 8-19, current levels of $PM_{10}$ are well below the annual mean limit value. In the year 2022, annual mean concentrations of $PM_{10}$ ranged from 7.9 – 20.0 ug/m³ across all Zone C stations, with no exceedance of short-term limit values (EPA, 2023). In the year 2023, annual mean concentrations of $PM_{10}$ ranged from 8.1 – 16.4 ug/m³ across all Zone C stations, with no exceedance of short-term limit values (EPA, 2024).

The closest representative suburban background monitoring to the site which continuously monitors for concentrations of particulate matter ($PM_{2.5}$ and $PM_{10}$) is located in Drogheda (ca. 5km northeast of the site). Air quality monitoring carried out at this location is likely to be broadly representative of conditions that may be experienced at the site. Concentrations of $PM_{10}$ are well below the threshold limits contained within the regulations at Drogheda monitoring station, with an annual mean of 11.9 ug/m³ and 10.9 ug/m³ measured in 2022 and 2023, respectively (EPA, 2023; EPA, 2024).

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A conservative estimate of the background $PM_{10}$ levels for the region of the Proposed Development is 11.4 µg/m$^3$.

Measured concentrations of $PM_{2.5}$ for the years 2022 and 2023 are presented in Table 8-20 for Zone C monitoring stations.

*Table 8-20 Concentrations of $PM_{2.5}$ at Zone C Monitoring Stations*

| Station | Averaging Period | Year | |
|---|---|---|---|
| | | 2022 | 2023 |
| Portlaoise | Annual Mean $PM_{2.5}$ (µg/m$^3$)[16] | 8.1 | 7.4 |
| Ennis | | 15.6 | 12.3 |
| Bray | | 5.7 | 5.7 |
| Sligo[17] | | - | - |
| Clonmel | | 7.3 | 6.1 |
| Carlow Town | | 7.4 | 6.5 |
| Waterford Brownes Road | | 9.9 | 7.8 |
| Waterford Port | | - | 7.6 |
| Navan | | 8.3 | 7.5 |
| Letterkenny | | 10.7 | 9.9 |
| Wexford Town | | 9.7 | 8.4 |
| Limerick People's Park | | 9.3 | 6.5 |
| Limerick Henry Street | | 8.4 | 7.2 |
| Athlone | | 8.9 | 8.3 |
| Tralee | | 12.9 | 10.0 |
| Drogheda | | 6.9 | 6.0 |
| Naas | | 7.5 | 6.6 |
| Greystones | | 6.9 | 6.3 |
| Leixlip | | 7.0 | 6.4 |

[16] Annual average limit value - 25 µg/m$^3$ (EU Council Directive 2008/50/EC & S.I. No. 739 of 2022)
Daily limit value - 50 µg/m3 (EU Council Directive 2008/50/EC & S.I. No. 739 of 2022)

[17] There is no data for Sligo in 2022 and 2023 due to operational issues

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| Station | Averaging Period | Year | |
|---|---|---|---|
| | | 2022 | 2023 |
| Dundalk | | 19.8 | 8.9 |
| Galway Briarhill | | 9.8 | 7.1 |
| Ballinasloe[18] | | - | 10.2 |

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As is evident from the results shown in Table 8-20, current levels of $PM_{2.5}$ are well below the annual mean limit value of 25 µg/m$^3$. In the year 2022, annual mean concentrations of $PM_{2.5}$ ranged from 5.7 – 15.6 ug/m$^3$ across all Zone C stations (EPA, 2023; EPA 2024). In the year 2023, annual mean concentrations of $PM_{2.5}$ ranged from 5.7 – 12.3 ug/m$^3$ across all Zone C stations (EPA, 2024).

Concentrations of $PM_{2.5}$ are well below the threshold limits contained within the regulations at Drogheda monitoring station, with an annual mean of 6.9 ug/m$^3$ and 6.0 ug/m$^3$ measured in 2022 and 2023, respectively (EPA, 2023; EPA, 2024).

A conservative estimate of the background $PM_{2.5}$ levels for the region of the Proposed Development is 6.5 ug/m$^3$.

All air quality data referenced in this chapter represent the most recent and publicly available information at the time of writing (i.e. up to 2023) and are considered reliable for the purposes of this assessment.

### 8.3.2 Sensitive Designated Ecological Habitats

Background concentrations for $NO_X$, $NH_3$, and nitrogen deposition at the identified designated habitats (River Boyne and Blackwater SAC) were derived from the 1 km grid square concentrations provided on the APIS website (APIS, 2025). This approach aligns with UK Environment Agency (2014) and UK Defra (2016). These concentrations are presented in Table 8-21 and have been added to the REM modelled outputs in Section 8.5 to determine total pollutant levels.

Acid deposition data was not available via APIS for this site. As such, while acid deposition is acknowledged as a potential concern for sensitive habitats such as Alkaline Fens [7230] and Alluvial Forests [91E0], it could not be quantified in this assessment due to data limitations.

*Table 8-21 Background Concentrations for $NO_X$, $NH_3$, N Deposition and Acid Deposition*

| Sensitive Designated Habitat | $NO_X$ (µg/m$^3$) | $NH_3$ (µg/m$^3$) | Nitrogen Deposition (kg/ha/yr) | Acid Deposition (keqN/ha/yr) |
|---|---|---|---|---|
| River Boyne and Blackwater SAC | 5.8 | 2.9 | 7.1 | Not available via APIS for this site |

### 8.3.3 Macroclimate

Ireland has a typical maritime climate, largely due to its proximity to the Atlantic Ocean and the presence of the Gulf Stream. Due to the moderating effects of the Gulf Stream, Ireland

[18] Station newly installed in 2023, therefore low data capture for Ballinasloe in 2023

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does not suffer the temperature extremes that are experienced by many other countries at a similar latitude. Mean annual temperatures generally range between 9°C and 10°C. Winters tend to be cool and windy while summers are mostly mild and less windy. The prevailing wind direction is between the south and west with average annual wind speeds ranging between 6 knots in parts of south Leinster to over 15 knots in the extreme north. Rainfall in Ireland occurs throughout the year with reasonable frequency. The highest rainfall occurs in the western half of the country and on high ground; and generally, decreases towards the northeast. As the prevailing winds are from the west-southwest, the west of Ireland experiences the largest number of wet days. The area of least precipitation is along the eastern seaboard of the country.

### 8.3.4 Microclimate

The synoptic meteorological station at Dunsany, Co. Meath is located approximately 27.5km southwest of the Proposed Development; and for the purposes of the Proposed Development, weather data collected here may be considered similar to that which is experienced in the area of the site.

The weather in the area of the site is generally dominated by cool oceanic air masses, with cool winters, mild humid summers, and a lack of temperature extremes. Based on meteorological data at Dunsany over the last three years, the mean January temperature is 5°C, while the mean July temperature is 15.3°C. The prevailing wind direction is from a quadrant centred on the southwest. These are moderately warm winds from the Atlantic and they habitually bring rain. The expected annual rainfall for the eastern half of the country ranges between 750 and 1000mm. Easterly winds are less frequent, weaker, and tend to bring cooler weather from the northeast in spring and warmer weather from the southeast in summer.

#### *8.3.4.1 Rainfall*

Table 8-22 illustrates the monthly and annual rainfall data collected over a three-year period (2022-2024) at Dunsany Weather Station. The annual rates of precipitation ranged from 828.1 in 2022 to 1048.2 in 2023 with distribution of the highest monthly rainfall values falling mainly in the autumn and winter months. This is broadly within the expected range of the eastern half of the country.

*Table 8-22 Monthly Rainfall Values (mm) for Dunsany Weather Station from January 2021 to December 2024 (Source: Met Eireann)*

| Year | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Annual |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **2024** | 60.9 | 71.3 | 93.0 | 72.1 | 37.8 | 35.8 | 58.0 | 58.3 | 47.3 | 51.4 | 59.1 | 45.8 | **690.8** |
| **2023** | 54.2 | 17.7 | 127.9 | 70.9 | 25.1 | 50.5 | 184.5 | 107.2 | 109.9 | 125.8 | 70.9 | 103.6 | **1048.2** |
| **2022** | 29.5 | 118.1 | 38.2 | 35.3 | 63.8 | 64.0 | 34.7 | 14.1 | 126.4 | 141.1 | 81.9 | 81.0 | **828.1** |
| **Mean** | **80.2** | **59.7** | **63.4** | **61.1** | **65.1** | **71.5** | **61.4** | **77.7** | **71.8** | **90.6** | **84.0** | **83.2** | **869.7** |

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#### *8.3.4.2 Wind*

Wind at a particular location can be influenced by a number of factors, such as obstruction by trees or buildings, the nature of the terrain, and deflection by nearby mountains or hills. Wind blows most frequently from the south and west for open sites while winds from the northeast and north occur less often. The analysis of hourly weather data from Dunsany synoptic weather station over a period of 17 years suggests that the predominant wind direction blows from the southwest, with windspeeds of between 7 and 10 knots occurring most frequently.

Figure 8-7 provides a wind speed frequency distribution which represents wind speed classes and the frequency at which they occur (% of time) at Dunsany weather station over a period of 17 years. Wind speeds of 6 and 7 knots have the highest frequency, occurring approximately 9% of the time.

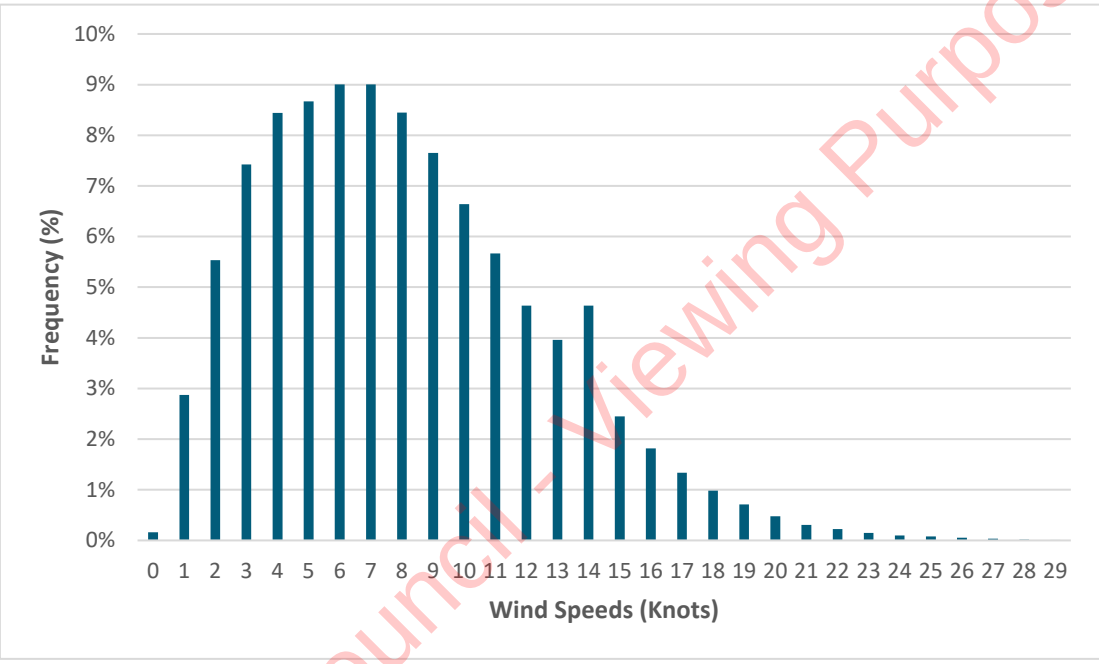



*Figure 8-7 Wind Speed Frequency Distribution at Dunsany Synoptic Weather Station over 17 years (2007-2024)*

Figure 8-8 provides a wind rose of the predominant wind directions and associated wind speeds at Dunsany. As is visible from Figure 8-8, the prevailing wind is from a south-westerly direction with an annual incidence of 34.08% for winds between 200 and 250 degrees. The most frequent wind speed associated with this wind direction is between 7 and 10 knots which is considered a 'gentle breeze' in terms of the Beaufort scale, this wind direction and wind speed occurs in combination approximately 11.13% of the time. The overall most common windspeed is between 7 and 10 knots, occurring in 31.74% of incidences, with wind speeds of between 4 and 6 knots occurring in 25.69% of incidences.

The lowest frequency is for winds blowing from the northern quadrant at approximately 3.10% of the time. The incidence of wind between 1 and 6 knots is about 41.52% with wind speeds of above 17 knots (8.7 m/s) occurring in just 4.48% of incidences. This wind rose is broadly representative of the prevailing conditions experienced at the site.

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This wind rose is considered broadly representative of the prevailing conditions experienced at the site due to the proximity of the Dunsany station and the similarity in topography and regional meteorological influences between the two locations.

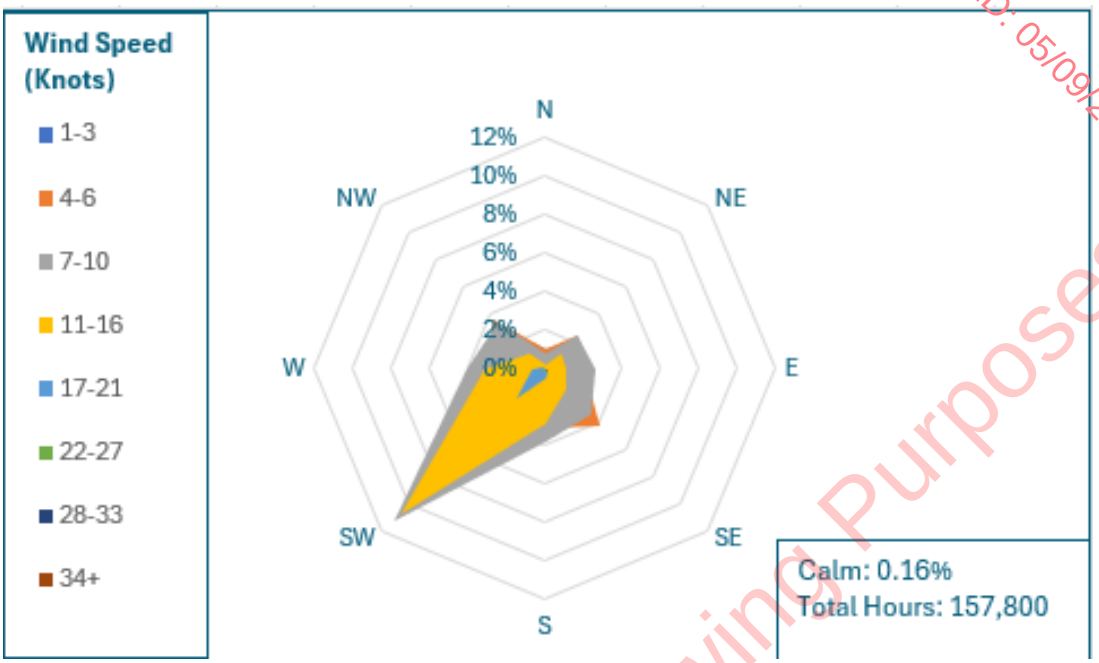



*Figure 8-8 17-year Wind Rose at Dunsany Weather Station 2007-2024 (Developed using Met Eireann Hourly Data)*

## 8.4 Characteristics of the Proposed Development

A comprehensive description of the Proposed Development is presented in Chapter 2 of this EIAR. The site is located within the southwestern environs of Drogheda, Co. Meath, approximately 1.7 km from the town centre. It has frontage along Rathmullan Road on its eastern boundary and lies within 200 m of the M1 motorway to the west. The northern extent of the site is situated between 40–50 m of the River Boyne.

Drogheda is designated as a Regional Growth Centre under the National Planning Framework. A Joint Urban Area Plan (UAP) for Drogheda is currently being prepared by Meath and Louth County Councils to guide future development and environmental management. While still in draft form, the UAP provides strategic context for the town's growth, which may be relevant to future assessments of air quality and infrastructure.

This description is restated here to ensure consistency and to provide clear context for the assessment of environmental impacts associated with the Proposed Development.

### 8.4.1 Aspects Relevant to this Assessment

#### *8.4.1.1 Construction Phase*

The aspects of the construction phase relevant to this chapter are as follows:

- Dust deposition, resulting in the soiling of surfaces;
- Visible dust plumes, which are evidence of dust emissions;

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- Elevated $PM_{10}$, $PM_{2.5}$ concentrations from demolition and construction activities (including earthworks and trackout); and
- An increase in concentrations of $PM_{10}$, $PM_{2.5}$ and nitrogen dioxide due to exhaust emissions from vehicles and equipment used on site (non-road mobile machinery) and vehicles accessing the site.

#### *8.4.1.2 Operational Phase*

The aspects of the operational phase relevant to this chapter are as follows:

- An increase in concentrations of $PM_{10}$, $PM_{2.5}$ and nitrogen dioxide due to exhaust emissions from vehicles and equipment used on site (non-road mobile machinery) and vehicles accessing the site.

## 8.5 Potential Effect of the Proposed Development

### 8.5.1 Construction Phase

#### *8.5.1.1 Dust*

There is potential for construction related air emissions to effect local air quality due to the Proposed Development. The IAQM *Guidance on the Assessment of Dust from Demolition and Construction* (2024) provides a framework for the assessment of risk, details of which are provided in Section 8.2 of this chapter.

**Potential Dust Emission Magnitude (Step 2A)**

The potential magnitude of dust emissions from demolition, construction, earthworks and trackout has been assessed, as identified in Table 8-23.

*Table 8-23 Dust Emission Magnitude for the site*

| Activity | Dust Emission Magnitude |
|---|---|
| Demolition | Small |
| Earthworks | Medium |
| Construction | Large |
| Trackout | Medium |

**Sensitivity of the Area (Step 2B)**

Table 8-24 outlines the sensitivity of the area to construction dust based on three factors: dust soiling, human health and ecology. The classification helps in assessing the potential effect of construction activities on air quality and guides mitigation.

*Table 8-24 Sensitivity of the Area*

| Sensitivity Type | Factors | Sensitivity of Area | |
|---|---|---|---|
| | | On-Site | Trackout |
| Dust Soiling | In order to account for a worst-case scenario, the sensitivity of the area has been classified as high for on-site activity | High | High |

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| Sensitivity Type | Factors | Sensitivity of Area | |
|---|---|---|---|
| | | On-Site | Trackout |
| | (demolition, earthworks and construction) and trackout. | | |
| Human Health | As per Section 8.3.1, a conservative estimate of the background $PM_{10}$ levels for the region of the Proposed Development is 11.4 µg/m$^3$. As the $PM_{10}$ concentration is less than 24 µg/m$^3$, the sensitivity of the area to human health effects is considered to be low. | Low | Low |
| Ecology | The River Boyne and River Blackwater Special Area of Conservation (SAC) is located directly north of the site. The River Boyne and River Blackwater SAC can be classified as a high sensitivity receptor to dust soiling for both on-site activity (demolition, earthworks and construction) and trackout. | High | High |

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**Risk of Dust Impacts (Step 2C)**

The outcomes of the assessments of potential magnitude of dust emissions and the sensitivity of the area are combined to determine the risk of impact. This risk is then used to inform the selection of appropriate mitigation. Table 8-25 details the risk of dust impacts for demolition, earthworks, construction and trackout activities.

*Table 8-25 Summary of Unmitigated Risks*

| Potential Impact | Sensitivity | Magnitude | | | |
|---|---|---|---|---|---|
| | | Demolition | Earthworks | Construction | Trackout |
| | | Small | Medium | Large | Medium |
| Dust Soiling Impacts | High | Medium Risk | Medium Risk | High Risk | Medium Risk |
| Human Health Impacts | Low | Negligible | Low Risk | Low Risk | Low Risk |
| Ecological Impacts | High | Medium Risk | Medium Risk | High Risk | Medium Risk |

The dust risk categories for each of the four activities determined in STEP 2C have been used to define the appropriate, site-specific, mitigation measures to be adopted in Section 8.6.1 of this chapter (Step 3 as per the IAQM *Guidance on the assessment of dust from demolition and construction* (2024) (see Section 8.2 of this chapter)).

For those cases where the risk is assigned as 'negligible', no mitigation measures beyond those required by legislation are required. However, additional mitigation measures as defined in Section 8.2 will be applied as part of good practice.

#### *8.5.1.2 Traffic Assessment*

There is also the potential for traffic emissions to affect air quality in the short-term over the construction phase, particularly due to the increase in HGVs accessing the site. Waterman Moylan Consulting Engineers (2025) have confirmed that the projected construction traffic volumes fall below the thresholds set out in the TII guidance.

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However, as outlined in Section 8.2.2.2, the construction stage traffic has been reviewed against the scoping criteria set out in the TII guidance document Air Quality Assessment of Specified Infrastructure Projects – PE-ENV-01106 (TII, 2022). None of the affected road links meet the thresholds for inclusion in a detailed local air quality assessment.

Specifically, the projected changes in traffic volumes, HDVs, speeds and road alignment fall below the defined criteria. Therefore, in accordance with TII Guidance, a detailed air quality assessment has been scoped out. This is considered a proportionate and appropriate approach, and no further assessment or precautionary measures are required.

It can be determined that the construction stage traffic will have a direct, short-term, negative and imperceptible effect on air quality and human health, which is overall not significant in EIA terms.

### 8.5.2 Operational Phase

The potential effects of the Proposed Development have been assessed by modelling emissions from the traffic generated as a result of the development using the TII Road Emissions Model (TII, 2025). The traffic data includes the Do Nothing and Do Something scenarios. The effect of $NO_2$, $PM_{10}$ and $PM_{2.5}$ emissions for the modelled Opening Year and Design Year was predicted at the nearest sensitive receptors to the development. This assessment allows the significance of the development, with respect to both relative and absolute effects, to be determined.

The TII guidance PE-ENV-01106 (TII, 2022) details a methodology for determining air quality impact significance criteria for TII road schemes and infrastructure projects. However, this significance criteria can be applied to any development that causes a change in traffic. The degree of effect is determined based on both the absolute and relative effects of the Proposed Development. Results are compared against the 'Do-Nothing' scenario, which assumes that the Proposed Development is not in place in future years, to determine the degree of effect.

#### *8.5.2.1 $NO_2$*

The results of the assessment of the effects of the Proposed Development on $NO_2$ in the Opening Year 2028 and Design Year 2043 are shown in Table 8-26. The annual average concentration is in compliance with the limit value at the worst-case receptors in the year 2028 and 2043. Concentrations of $NO_2$ are at most 34.1% of the annual limit value in 2028 and 30% of the annual limit value in 2043. In addition, the TII guidance (TII, 2022) states that the hourly limit value for $NO_2$ of 200 µg/m$^3$ is unlikely to be exceeded at roadside locations unless the annual mean is above 60 µg/m$^3$. As predicted $NO_2$ concentrations are significantly below 60 µg/m$^3$. It can be concluded that the short-term $NO_2$ limit value will be complied with at all receptor locations.

The effects of the Proposed Development on annual mean $NO_2$ concentrations can be assessed relative to 'Do Nothing' levels. $NO_2$ concentrations at the receptors assessed will increase as a result of the Proposed Development when compared with the Do-Nothing scenario. There will be at most an increase of 1.67µg/m$^3$ at receptor R3, which is a 4.1% change when compared with the ambient air quality limit value of 40 µg/m$^3$.

Where the predicted annual mean concentrations in the Opening Year and Design Year without the proposed scheme are less than 75% of the air quality standard (see Table 8-1) and there is a less than 5% change in concentrations compared with the annual mean ambient

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air quality standard, then, the impact is considered neutral as per the TII significance criteria (see Table 8-2). Therefore, the effect of the Proposed Development on $NO_2$ concentrations according to the TII guidance (TII, 2022) is neutral.

*Table 8-26 Predicted Annual Mean $NO_2$ Concentrations ($\mu g/m^3$)*

| Receptor | Impact Opening Year (2028) | | | | | | |
|---|---|---|---|---|---|---|---|
| | Do Nothing (DN) | % of AQLV | Do Something (DS) | % of AQLV | DS-DM | % of AQLV | Description |
| R1 | 11.6 | 29% | 12.75 | 31.9% | 1.15 | 2.9% | Neutral |
| R2 | 11.7 | 29.3% | 13.26 | 33.2% | 1.56 | 3.9% | Neutral |
| R3 | 11.78 | 29.5% | 13.63 | 34.1% | 1.67 | 4.1% | Neutral |
| R4 | 13.58 | 34% | 13.43 | 33.6% | -0.15 | -0.4% | Neutral |
| **Impact Design Year (2043)** | | | | | | | |
| R1 | 11.52 | 28.8% | 11.54 | 28.9% | 0.02 | 0.01% | Neutral |
| R2 | 11.56 | 28.9% | 11.59 | 30% | 0.03 | 0.01% | Neutral |
| R3 | 11.6 | 29% | 11.62 | 29.1% | 0.02 | 0.01% | Neutral |
| R4 | 11.59 | 28.9% | 11.63 | 29.1% | 0.04 | 0.2% | Neutral |

#### *8.5.2.2 $PM_{10}$*

In relation to changes in $PM_{10}$ concentrations as a result of the Proposed Development, the results of the assessment can be seen in Table 8-27 for the Opening Year 2028 and Design Year 2043. The annual average concentration is in compliance with the limit value at the worst-case receptors in the year 2028 and 2043. Concentrations of $PM_{10}$ are at most 28.2% of the annual limit value in 2028 and 29.3% of the annual limit value in 2043. In addition, the Proposed Development will not result in any exceedances of the daily $PM_{10}$ limit value of 50 $\mu g/m^3$. The effects of the Proposed Development on annual mean $PM_{10}$ concentrations can be assessed relative to 'Do Nothing' levels. $PM_{10}$ concentrations at the receptors assessed will increase as a result of the Proposed Development when compared with the Do-Nothing scenario.

There will be at most an increase of 2.25 $\mu g/m^3$ at receptor R3, which is a 4.5% change when compared with the ambient air quality limit value of 50 $\mu g/m^3$. As with $NO_2$, where the predicted annual mean concentrations in the Opening Year without the proposed scheme are less than 75% of the air quality standard (see Table 8-1) and there is a less than 5% change in concentrations compared with the annual mean ambient air quality standard, then, the impact is considered neutral as per the TII significance criteria (see Table 8-2). Therefore, the effect of the Proposed Development on $PM_{10}$ concentrations according to the TII guidance (TII, 2022) is neutral.

*Table 8-27 Predicted Annual Mean $PM_{10}$ Concentrations ($\mu g/m^3$)*

| Receptor | Impact Opening Year (2028) | | | | | | |
|---|---|---|---|---|---|---|---|
| | Do Nothing (DN) | % of AQLV | Do Something (DS) | % of AQLV | DS-DM | % of AQLV | Description |
| R1 | 11.63 | 23.3% | 13.01 | 26% | 1.38 | 2.8% | Neutral |
| R2 | 11.75 | 23.5% | 13.64 | 27.2% | 1.89 | 3.8% | Neutral |
| R3 | 11.85 | 23.7% | 14.1 | 28.2% | 2.25 | 4.5% | Neutral |
| R4 | 13.99 | 28% | 13.84 | 27.7% | -0.15 | -0.03% | Neutral |
| **Impact Design Year (2043)** | | | | | | | |
| R1 | 13.14 | 26.3% | 13.48 | 27.0% | 0.34 | 0.7% | Neutral |
| R2 | 13.82 | 27.6% | 14.16 | 28.3% | 0.34 | 0.7% | Neutral |

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| | | | | | | | |
|---|---|---|---|---|---|---|---|
| R3 | 14.33 | 28.7% | 14.66 | 29.3% | 0.33 | 0.7% | Neutral |
| R4 | 14.29 | 28.6% | 14.84 | 29.3% | 0.34 | 0.7% | Neutral |

#### 8.5.2.3 $PM_{2.5}$

In relation to changes in $PM_{2.5}$ concentrations as a result of the Proposed Development, the results of the assessment can be seen in Table 8-28 for the modelled Opening Year 2028 and Design Year 2043. The annual average concentration is in compliance with the limit value at the worst-case receptors in the year 2028 and 2043. Concentrations of $PM_{2.5}$ are at most 31.7% of the annual limit value in 2028 and 33.4% of the annual limit vlaue in 2043. The effect of the Proposed Development on annual mean $PM_{2.5}$ concentrations can be assessed relative to 'Do Nothing' levels. $PM_{2.5}$ concentrations at the receptors assessed will increase as a result of the Proposed Development when compared with the Do-Nothing scenario.

There will be at most an increase of 1.18 µg/m$^3$ at receptors R3, which is a 4.0% change when compared with the ambient air quality limit value of 25 µg/m$^3$. As with $NO_2$, where the predicted annual mean concentrations in the Opening Year without the proposed scheme are less than 75% of the air quality standard (see Table 8-1) and there is a less than 5% change in concentrations compared with the annual mean ambient air quality standard, then, the impact is considered neutral as per the TII significance criteria (see Table 8-2). Therefore, the effect of the Proposed Development on $PM_{2.5}$ concentrations according to the TII guidance (TII, 2022) is neutral.

*Table 8-28 Predicted Annual Mean $PM_{2.5}$ Concentrations (µg/m$^3$)*

| Receptor | Impact Opening Year (2028) | | | | | | |
|---|---|---|---|---|---|---|---|
| | Do Nothing (DN) | % of AQLV | Do Something (DS) | % of AQLV | DS-DM | % of AQLV | Description |
| R1 | 6.62 | 26.5% | 7.34 | 29.4% | 0.72 | 2.9% | Neutral |
| R2 | 6.68 | 27.5% | 7.67 | 30.7% | 0.99 | 4.0% | Neutral |
| R3 | 6.74 | 27.0% | 7.92 | 31.7% | 1.18 | 4.7% | Neutral |
| R4 | 7.87 | 31.5% | 7.78 | 31.1% | -0.09 | -0.4% | Neutral |
| Impact Design Year (2043) | | | | | | | |
| R1 | 7.43 | 29.7% | 7.61 | 30.4% | 0.18 | 0.7% | Neutral |
| R2 | 7.8 | 31.2% | 7.99 | 32.0% | 0.19 | 0.8% | Neutral |
| R3 | 8.07 | 32.3% | 8.25 | 33.0% | 0.18 | 0.7% | Neutral |
| R4 | 8.05 | 32.2% | 8.35 | 33.4% | 0.30 | 1.2% | Neutral |

#### 8.5.2.4 Ecological Impacts

An assessment of the impact of the proposed project has been undertaken using the approach outlined in the IAQM guidance document (IAQM, 2020) and the TII guidance (TII, 2022). An assessment of the ecologically sensitive sites has been carried out. As outlined in Section 8.2.3.2.1, sections of the River Boyne and Blackwater SAC are within 200m of road links impacted by the Proposed Development. Therefore, an assessment of air quality impacts to ecology was carried out within sections of these sites closest to the impacted roads.

Annual mean NOx and ammonia concentrations, as well as nitrogen deposition have, been compared to the relevant critical levels and loads for Alkaline Fens [7230] in Table 8-29 for the Opening Year 2028 and in Table 8-30 for Design Year 2043 for the worst-case ecologically sensitive receptors. Annual mean NOx and ammonia concentrations, as well as nitrogen deposition have, been compared to the relevant critical levels and loads for Alluvial Forests [91E0] in Table 8-31 for the Opening Year 2028 and in Table 8-32 for Design Year 2043 for

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the worst-case ecologically sensitive receptors. The ground level concentrations and nitrogen deposition flux are presented for the closest locations within the ecological sites nearest to the affected road.

The results in Table 8-29 to Table 8-32 include background concentrations as per Table 8-21. With respect to both Total Nitrogen Deposition Flux there are both a lower and an upper critical load threshold as defined in Table 8-17:

- 10–20 kg N/ha/yr for Alkaline Fens [7230]; and
- 10–15 kg N/ha/yr for Alluvial Forests [91E0].

Acid deposition data was not available via APIS for the River Boyne and Blackwater SAC. The REM tool calculates acid deposition based solely on emissions from the proposed development and does not incorporate background acid deposition data. In this case, the model outputs were zero, indicating no contribution from the development. Therefore, this assessment focuses on nitrogen deposition and associated impacts. Acid deposition is acknowledged as a potential concern for sensitive habitats such as Alkaline Fens [7230] but could not be quantified due to data limitations.

With respect to $NO_X$ and $NH_3$, results have been compared against the appropriate limit value of 30 µg/m$^3$ and 3 µg/m$^3$, respectively.

*Table 8-29 Opening Year 2028: Alkaline Fens [7230]*

| | Predicted Ground Level $NO_X$ Concentration (including background) µg/m$^3$ | Predicted Ground Level $NH_3$ Concentration (including background) µg/m$^3$ | Total Nitrogen Deposition Flux (kg/ha/yr) | Acid Deposition Flux (keq/ha/yr) |
|---|---|---|---|---|
| Do Nothing | 5.92 | 2.9 | 7.11 | 0.0 |
| Do Something | 5.92 | 2.9 | 7.11 | 0.0 |
| Difference between Do-Something and Do-Nothing | 0 | 0 | 0 | 0 |
| Change relative to lower critical load (%) | - | - | - | - |
| Change relative to upper critical load (%) | | - | - | - |

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*Table 8-30 Design Year 2043: Alkaline Fens [7230]*

| | Predicted Ground Level $NO_X$ Concentration (including background) $\mu g/m^3$ | Predicted Ground Level $NH_3$ Concentration (including background) $\mu g/m^3$ | Total Nitrogen Deposition Flux (kg/ha/yr) | Acid Deposition Flux (keq/ha/yr) |
|---|---|---|---|---|
| Do Nothing | 5.95 | 2.9 | 7.11 | 0.0 |
| Do Something | 5.96 | 2.9 | 7.11 | 0.0 |
| Difference between Do-Something and Do-Nothing | 0 | 0 | 0 | 0 |
| Change relative to lower critical load (%) | - | - | - | - |
| Change relative to upper critical load (%) | | - | - | - |

*Table 8-31 Opening Year 2028: Alluvial Forests [91E0]*

| | Predicted Ground Level $NO_X$ Concentration (including background) $\mu g/m^3$ | Predicted Ground Level $NH_3$ Concentration (including background) $\mu g/m^3$ | Total Nitrogen Deposition Flux (kg/ha/yr) | Acid Deposition Flux (keq/ha/yr) |
|---|---|---|---|---|
| Do Nothing | 5.92 | 2.9 | 0.02 | 0 |
| Do Something | 5.92 | 2.9 | 0.02 | 0 |
| Difference between Do-Something and Do-Nothing | 0 | 0 | 0 | 0 |
| Change relative to lower critical load (%) | - | - | - | - |
| Change relative to upper critical load (%) | | - | - | - |

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*Table 8-32 Design Year 2043: Alluvial Forests [91E0]*

| | Predicted Ground Level $NO_x$ Concentration (including background) µg/m³ | Predicted Ground Level $NH_3$ Concentration (including background) µg/m³ | Total Nitrogen Deposition Flux (kg/ha/yr) | Acid Deposition Flux (keq/ha/yr) |
|---|---|---|---|---|
| Do Nothing | 5.95 | 2.9 | 0.02 | 0 |
| Do Something | 5.96 | 2.9 | 0.03 | 0 |
| Difference between Do-Something and Do-Nothing | | - | | |
| Change relative to lower critical load (%) | 0.03% | - | 0.1% | - |
| Change relative to upper critical load (%) | | - | 0.07% | - |

The annual mean NOx concentrations (including background) are well below the ecological critical level of 30 µg/m³ at all modelled habitats, in both the Do-Nothing and Do-Something scenarios, for both the Opening and Design Years. Similarly, annual mean $NH_3$ concentrations (including background) remain below the critical level of 3 µg/m³ across all scenarios and years. Nitrogen deposition levels (including background) are within the range of critical loads for both Alkaline Fens [7230] and Alluvial Forests [91E0], with changes between scenarios representing less than 0.1% of the lower critical load. Acid deposition (as N) was modelled as zero by the REM tool and could not be further assessed due to the absence of background data; however, it is not expected to be significant.

In accordance with the EPA Guidelines (EPA, 2022), the ecological impacts associated with operational phase traffic emissions are considered to be direct, long-term, negative and slight, which is overall not significant in EIA terms.

#### *8.5.2.5 Conclusion*

Overall, the TII significance criteria have identified neutral impacts due to increases in $NO_2$, $PM_{10}$ and $PM_{2.5}$ annual mean concentrations which are less than 5% of the annual mean ambient air quality standards (and the annual mean concentrations are less than 75% of the air quality standard). This equates to a potential effect of the Proposed Development on ambient air quality, and human health, in the operational stage according to the EPA guidelines (EPA, 2022) which is considered direct, long-term, negative, which is overall not significant in EIA terms.

#### *8.5.2.6 $CO_2$*

There is the potential for increased traffic volumes to effect climate, therefore, traffic related $CO_2$ emissions have also been calculated through the use of the TII REM tool. The output is provided in terms of $CO_2$eq for the Opening Year (2028) and Design Year (2043). Both the 'Do Nothing' and 'Do Something' scenarios are quantified in order to determine the degree of change in emissions as a result of the Proposed Development.

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The predicted concentrations of $CO_2$ for the Opening Year (2028) and Design Year (2043) are detailed in Table 8-33.

*Table 8-33 Climate Traffic Assessment*

| Year | Scenario | $CO_2$eq (tonnes/annum) |
|---|---|---|
| 2028 | Do Nothing | 53.92 |
| | Do Something | 73.37 |
| 2043 | Do Nothing | 82.22 |
| | Do Something | 73.81 |
| Increment in 2028 | | +19.45 |
| Increment in 2043 | | -8.41 |

In 2028, the Do Something scenario results in higher emissions due to increased traffic volumes associated with the Proposed Development. However, by 2043, the Do Something scenario shows a reduction in $CO_2$eq emissions compared to the Do Nothing scenario. This reduction may be attributed to:

- Improved traffic flow and reduced congestion, leading to more efficient vehicle operation;
- Fleet evolution, with a higher proportion of low-emission or electric vehicles assumed in future projections; and/or
- Infrastructure enhancements that support sustainable transport and reduce stop-start driving conditions.

Further discussion on the effect of the increased traffic volumes on Climate is discussed in Chapter 9 'Climate'.

### 8.5.3 Potential Cumulative Effects

The EC *Guidelines for the Assessment of Indirect and Cumulative Impacts as well as Impact Interactions*, defines cumulative effects as "impacts that result from incremental changes caused by other past, present or reasonably foreseeable actions together with the project". Effects resulting from the interaction of impacts, or from associated or off-site projects, are considered indirect effects. Cumulative effects are often indirect in nature, arising from the accumulation of individually minor impacts.

Cumulative air quality effects have the potential to arise locally when construction activities associated with the Proposed Development occur simultaneously with other developments in the area.

A review of other off-site developments was completed as part of this assessment. Chapter 2 of this EIAR details the existing, proposed and granted planning permissions on record in the area, a review of these planning permissions has been completed as part of this assessment, without repeating them here.

The cumulative effects on the air quality of the current Proposed Development and other permitted or existing developments have been considered, through the generation of air pollutants. The potential effects on air quality are assessed in Section 8.5 and it is concluded that there are no other potentially significant cumulative effects associated with the Proposed Development and considered offsite permitted developments.

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In terms of dust, no significant effects are predicted. Good construction practice, including the implementation of the identified mitigation measures, will be employed at the Proposed Development site to manage and minimise dust emissions.

Assessment of road traffic emissions on air quality was based on traffic data that includes contributions from other existing and permitted developments on the surrounding road network. Therefore, cumulative effects have been accounted for, and the resulting impact on ambient air quality has been determined as not being significant.

It is considered that the cumulative emissions from the Proposed Development, when assessed alongside other developments in the area, will not result in exceedances of ambient air quality standards. There is sufficient atmospheric capacity (or "atmospheric budget") to accommodate these emissions without significant impact on baseline air quality.

It is concluded that there are no other potentially significant cumulative effects on air quality arising from the Proposed Development in combination with the identified existing and permitted off-site developments, as described in Chapter 2 of this EIAR. All cumulative effects, including those considered to fall below the threshold of significance, have been assessed as part of this evaluation.

### 8.5.4 "Do Nothing" Effect

If the Proposed Development were not to proceed, ambient air quality at the site will remain as per the baseline and will change in accordance with trends within the wider area (including influences from potential new developments in the surrounding area, changes in road traffic etc). Under the Do-Nothing Scenario, construction works associated with the Proposed Development will not take place. Effects from increased traffic volumes and associated emissions from the Proposed Development will also not occur.

## 8.6 Avoidance, Remedial and Mitigation Measures

### 8.6.1 Construction Phase

To minimise potential air quality impacts during construction, a suite of best practice mitigation measures will be implemented at the Proposed Development site. These measures are informed by guidance from the IAQM (2024) and are designed to effectively manage dust and emissions. The following measures will be adopted as appropriate to the scale and nature of the works:

**Communications**

- Develop and implement a stakeholder communications plan that includes community engagement before work commences on site;
- Display the name and contact details of person(s) accountable for air quality and dust issues on the site boundary. This may be the environment manager/engineer or the site manager;
- Display the head or regional office contact information; and

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- Develop and implement a Dust Management Plan (DMP), the final dust management plan will form part of the overall construction management plan which will formally be prepared and submitted to Meath County Council post grant of planning permission.

**Site Management**

- Record all dust and air quality complaints, identify cause(s), take appropriate measures to reduce emissions in a timely manner, and record the measures taken;
- Make the complaints log available to the local authority when asked;
- Record any exceptional incidents that cause dust and/or air emissions, either on- or off-site, and the action taken to resolve the situation in the site log book; and
- Hold regular liaison meetings with other high risk construction sites within 250m of the site boundary, to ensure plans are co-ordinated and dust and particulate matter emissions are minimised. It is important to understand the interactions of the off-site transport/deliveries which might be using the same strategic road network routes.

**Monitoring**

- Undertake daily on-site and off-site inspection, where receptors (including roads) are nearby, to monitor dust, record inspection results, and make the log available to Meath County Council when asked. This should include regular dust soiling checks of surfaces such as street furniture, cars and window sills within 100 m of site boundary, with cleaning to be provided if necessary;
- Carry out regular site inspections to monitor compliance with the DMP, record inspection results, and make an inspection log available to Meath County Council when asked; and
- Increase the frequency of site inspections by the person accountable for air quality and dust issues on site when activities with a high potential to produce dust are being carried out and during prolonged dry or windy conditions.

**Preparing and Maintaining the site**

- Plan site layout so that machinery and dust causing activities are located away from receptors, as far as is possible;
- Erect solid screens or barriers around dusty activities or the site boundary that are at least as high as any stockpiles on site;
- Fully enclose site or specific operations where there is a high potential for dust production and the site is active for an extensive period;
- Avoid site runoff of water or mud;
- Keep site fencing, barriers and scaffolding clean using wet methods;
- Remove materials that have a potential to produce dust from site as soon as possible, unless being re-used on site. If they are being re-used on-site cover as described below; and
- Cover, seed or fence stockpiles to prevent wind whipping.

**Operating Vehicle/Machinery and Sustainable Travel**

- Ensure all vehicles switch off engines when stationary - no idling vehicles;

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- Avoid the use of diesel- or petrol-powered generators and use mains electricity or battery powered equipment where practicable; and
- A speed restriction of 20 km/hr will be applied as an effective control measure for dust for on-site vehicles using unpaved haul roads.

**Operations**

- Only use cutting, grinding or sawing equipment fitted or in conjunction with suitable dust suppression techniques such as water sprays or local extraction, e.g. suitable local exhaust ventilation systems;
- Ensure an adequate water supply on the site for effective dust/particulate matter suppression/ mitigation, using non-potable water where possible and appropriate;
- Use enclosed chutes and conveyors and covered skips;
- Minimise drop heights from conveyors, loading shovels, hoppers and other loading or handling equipment and use fine water sprays on such equipment wherever appropriate; and
- Ensure equipment is readily available on site to clean any dry spillages and clean up spillages as soon as reasonably practicable after the event using wet cleaning methods.

**Waste Management**

- Avoid bonfires and burning of waste materials.

**Measures Specific to Demolition**

- Ensure effective water suppression is used during demolition operations. Handheld sprays are more effective than hoses attached to equipment as the water can be directed to where it is needed. In addition, high volume water suppression systems, manually controlled, can produce fine water droplets that effectively bring the dust particles to the ground;
- Avoid explosive blasting, using appropriate manual or mechanical alternatives; and
- Bag and remove any biological debris or damp down such material before demolition;

**Measures Specific to Earthworks**

- Re-vegetate earthworks and exposed areas/soil stockpiles to stabilise surfaces as soon as practicable;
- Use Hessian, mulches or trackifiers where it is not possible to re-vegetate or cover with topsoil, as soon as practicable; and
- Only remove the cover in small areas during work and not all at once.

**Measures Specific to Construction**

- Ensure sand and other aggregates are stored in bunded areas and are not allowed to dry out, unless this is required for a particular process, in which case ensure that appropriate additional control measures are in place.

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**Measures Specific to Trackout**

- Use water-assisted dust sweeper(s) on the access and local roads, to remove, as necessary, any material tracked out of the site. This may require the sweeper being continuously in use;
- Avoid dry sweeping of large areas;
- Ensure vehicles entering and leaving sites are covered to prevent escape of materials during transport;
- Inspect on-site haul routes for integrity and instigate necessary repairs to the surface as soon as reasonably practicable;
- Record all inspections of haul routes and any subsequent action in the site log book;
- Install hard surfaced haul routes, which are regularly damped down with fixed or mobile sprinkler systems or mobile water bowsers and regularly cleaned;
- Implement a wheel washing system (with rumble grids to dislodge accumulated dust and mud prior to leaving the site where reasonably practicable);
- Ensure there is an adequate area of hard surfaced road between the wheel wash facility and the site exit, wherever site size and layout permit; and
- Access gates to be located at least 10m from receptors where possible.

**Measures Specific to Ecological Receptors**

- Dust suppression: Using water sprays, dust suppressants, or covering materials to reduce dust particles;
- Vegetative barriers: Planting trees, shrubs or grasses to act as windbreaks and capture dust particles;
- Site management: Implementing good housekeeping practices, such as regular cleaning of access roads and minimising the movement of vehicles on unpaved surfaces;
- Monitoring: Regularly monitoring dust levels and ecological receptors to ensure that mitigation measures are effective; and
- Timing of activities: Scheduling dust-generating activities during periods of low wind or when ecological receptors are less sensitive.

These measures will be monitored and reviewed throughout the construction phase to ensure their effectiveness and compliance with relevant standards.

### 8.6.2 Operational Phase

The assessment has determined that the operational phase of the Proposed Development will result in a negligible impact on local air quality. This conclusion is based on the output of the Transport Infrastructure Ireland (TII) Road Emissions Model (REM), which incorporates traffic data associated with the Proposed Development as well as other existing and permitted developments in the surrounding area. The modelled emissions were compared against relevant ambient air quality standards, and the results indicate that pollutant concentrations will remain well within acceptable limits. As such, no site-specific mitigation measures are proposed for the operational phase.

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### 8.6.3 "Worst Case" Scenario

A worst-case scenario has been assumedin Step 2A (defining the potential dust emission magnitude) of the construction dust impact assessment and the highest risk category has been used to inform the selection of appropriate mitigation measures for the Proposed Development.

It is expected that adequate mitigation measures, as outlined in Section 8.6.1, will assist in preventing nuisance dust from resulting in any significant effects. However, even with the most rigorous DMP in place, it is not possible to guarantee that the dust mitigation measures will be effective all the time, and if, for example, dust emissions occur under adverse weather conditions, or there is an interruption to the water supply used for dust suppression, the local community may experience occasional, short-term dust annoyance. The likely scale of this would not be considered sufficient to change the conclusion that with mitigation the effects will be 'not significant'.

A worst-case scenario has been assumed to the operational phase traffic emissions assessment in terms of traffic volumes experienced on the surrounding road network and associated air emissions. The worst-case contributions predicted by the tool are added to the existing background concentration to provide a worst-case predicted ambient concentration. The compliance of the Proposed Development with the relevant ambient air quality standards is subsequently assessed by comparison with the worst-case ambient concentrations. Associated effects have been determined as negligible in this case.

## 8.7 Residual Effects

The IAQM recommends that significance is only assigned to effect after considering the construction activity mitigation. The risk of dust effects has been determined in Step 2C and the appropriate dust mitigation measures identified in Step 3 (see Section 8.6.1 of this chapter). The final step is to determine whether there are significant effects arising from the construction phase of the Proposed Development. With these measures in place, the residual effects from construction dust are predicted to be not significant.

The traffic generated by the Proposed Development has been assessed using the TII REM which incorporates cumulative traffic volumes. The results indicate that the impact on local air quality during the operational phase will be negligible, and no exceedances of ambient air quality standards are predicted.

Therefore, it is concluded that the Proposed Development will not give rise to any significant adverse residual effects in terms of air quality. The site is considered suitable for the Proposed Development from an air quality perspective.

## 8.8 Monitoring

The monitoring of construction dust during the construction phase of the Proposed Development is recommended to ensure that effects are not experienced beyond the site boundary. Monitoring of dust can be carried out by using the Bergerhoff Method. This involves placing Bergerhoff Dust Deposit Gauges at a strategic locations along the site boundaries for

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a period of 30 +/- 2 days. The selection of sampling point locations should be carried out in consideration of the requirements of *VDI 2119* with respect to the location of the samplers relative to buildings and other obstructions, height above ground, and sample collection and analysis procedures. After the exposure period is complete, the gauges should be removed from the site; the dust deposits in each gauge will then be determined gravimetrically and expressed as a dust deposition rate in mg/m$^2$/day in accordance with the relevant standard.

Due to the negligible effect on air quality from the operational phase of the Proposed Development, no specific monitoring is recommended except for monitoring via the Bergerhoff Method.

## 8.9 Interactions

Interactions between Air Quality and other aspects of this EIAR have been considered in this section of the chapter. This chapter has been informed by, and should be read in conjunction with, other relevant chapters including Population and Human Health, Biodiversity, Land and Soils, Climate, and Traffic and Transport, to ensure a consistent and comprehensive assessment of potential interactions.

### 8.9.1 Population and Human Health

Air Quality has a direct interaction with population and human health, particularly in relation to the potential exposure to dust and traffic-related pollutants. The Proposed Development has the potential to generate dust during construction and emissions from traffic during operation, which could affect nearby sensitive receptors if not properly managed.

However, the mitigation measures employed at the Proposed Development, as outlined in Section 8.6.1, will ensure that all effects are compliant with ambient air quality standards, and that exposure levels remain below thresholds known to impact human health.

Furthermore, traffic-related pollutants have been assessed using the TII REM and determined and determined as having an overall negligible effect. Therefore, air quality effects from the Proposed Development are not expected to have a significant effect on population and human health. This chapter should be read in conjunction with Chapter 4 (Population and Human Health), to provide a comprehensive understanding of potential health-related interactions.

### 8.9.2 Biodiversity

Interactions between air quality and biodiversity have been considered in conjunction with Chapter 5 (Biodiversity). During the construction phase, dust emissions could potentially affect nearby habitats and species. However, the mitigation measures outlined in the chapter will minimise dust deposition and no significant impacts on designated sites or sensitive ecological receptors are anticipated.

### 8.9.3 Land and Soils

Construction phase activities such as land clearing, excavations, stockpiling of materials etc. have the potential to generate dust, which may interact with land and soils. This interaction has been considered alongside Chapter 6 (Land and Soils). With the application of the appropriate dust control measures, no significant effects are predicted during the construction

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phase. There are no potentially significant interactions identified during the operational phase between air quality and land and soils.

### 8.9.4 Climate

Air quality and climate are interrelated due to shared sources of emissions, particularly from the combustion of fossil fuels during both the construction and operational phases of the Proposed Development. These activities generate pollutants that contribute to both local air quality impacts and global climate change.

While air quality does not directly influence climate, the sources of emissions that affect both are closely linked. As such, the assessment of air quality has been undertaken in parallel with the climate assessment presented in Chapter 9 (Climate) to ensure consistency in the evaluation of emissions and their potential impacts.

### 8.9.5 Traffic

Traffic is a key source of air quality impacts, particularly during the operational phase. This interaction has been assessed in detail in Chapter 13 (Traffic and Transport). The TII Road Emissions Model (REM) was used to evaluate traffic-related emissions, and the results indicate that the Proposed Development will not result in significant air quality effects due to traffic. Therefore, no significant interaction between air quality and traffic is anticipated.

## 8.10 Difficulties Encountered When Compiling

No difficulties have been encountered while compiling this chapter, with the exception of the absence of acid deposition data for the River Boyne and Blackwater SAC via the APIS GIS portal. This limitation meant that acid deposition impacts could not be quantified, and the assessment focused on nitrogen deposition and associated ecological effects.

## 8.11 Conclusion

The air quality assessment has considered both the construction and operational phases of the Proposed Development, including potential cumulative effects and interactions with other environmental factors. The assessment was informed by relevant guidance, including IAQM and TII methodologies, and incorporated a worst-case approach where appropriate.

With the implementation of the mitigation measures outlined in Section 8.6.1, the construction phase is not expected to result in any significant residual effects on local air quality. Operational traffic emissions have been assessed using the TII Road Emissions Model (REM) and are predicted to have a negligible impact on ambient air quality.

Overall, the Proposed Development is not expected to give rise to any significant adverse effects in terms of air quality, and the site is considered suitable for development from an air quality perspective.

## 8.12 References

Air Pollution Act 2012 (S.I. No. 326 of 2012) Irish Statute Book.

Air Quality Standards Regulations 2011 (S.I. No. 180 of 2011) Irish Statute Book.

RECEIVED: 05/09/2025
Meath County Council - Viewing Purposes Only!

Air Quality, Clean Air for Europe Directive (2008/50/EC) EUR-Lex.

Chartered Institute of Ecology and Environmental Management (CIEEM) (2021) Advice on Ecological Assessment of Air Quality Impacts. Chartered Institute of Ecology and Environmental Management. Winchester, UK.

Department of the Environment, Transport and the Regions, 1995. The Environmental Effects of Dust from Surface Mineral Workings- Volume 2. Technical Report.

Environmental Protection Agency (2023) Air Quality in Ireland 2022 Annual Report on Air Quality in Ireland from the Environmental Protection Agency.

Environmental Protection Agency (2024) Air Quality in Ireland 2023 Annual Report on Air Quality in Ireland from the Environmental Protection Agency.

European Parliament and Council (2024) Directive (EU) 2024/2881 of 23 October 2024 on Ambient Air Quality and Cleaner Air for Europe (recast). Official Journal of the European Union, L series, 20 November 2024.

German VDI (2002) Technical Guidelines on Air Quality Control – TA Luft.

Guidelines for the Assessment of Indirect and Cumulative Impacts as well as Impact Interactions, European Commission, 1999.

Institute of Air Quality Management (IAQM) 2016, Guidance on the Assessment of Mineral Dust Impacts for Planning, London, United Kingdom.

Institute of Air Quality Management (2017) Land-Use Planning & Development Control: Planning for Air Quality.

Institute of Air Quality Management (2022) Guidance on the Assessment of Air Quality Impacts on Designated Nature Conservation Sites.

Institute of Air Quality Management (2024) Guidance on the Assessment of Dust from Demolition and Construction.

Met Eireann (2025) Daily Meteorological Data for Dunsany Synoptic Weather Station.

Met Eireann (2025) Monthly Meteorological Data for Dunsany Synoptic Weather Station.

Transport Infrastructure Ireland (2011) Guidelines for the Treatment of Air Quality During the Planning and Construction of National Road Schemes.

UK Department for Environment, Food and Rural Affairs (2020) $NO_x$ to $NO_2$ Conversion Spreadsheet (Version 8.1).

UK Department for Environment, Food and Rural Affairs (2008) Analysis of the relationship between annual mean nitrogen dioxide concentration and exceedances of the 1-hour mean AQS Objective.

RECEIVED: 05/09/2025
Meath County Council - Viewing Purposes Only!

UK Highways Agency (2019) UK Design Manual for Roads and Bridges (DMRB), Volume 11, Environmental Assessment, Section 3 Environmental Assessment Techniques, Part 1 LA 105 Air Quality.

United Nations Economic Commission for Europe (1999) Protocol to Abate Acidification, Eutrophication and Ground-level Ozone (Gothenburg Protocol). Geneva: United Nations Economic Commission for Europe.

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# 9 CLIMATE

## 9.1 Introduction

This chapter of the EIAR identifies, describes, and presents an assessment of the eventual significant direct and indirect effects of the Proposed Development at Rathmullan, Co. Meath on climate (for example greenhouse gas emissions) and its vulnerability to climate change.

It should be read in conjunction with Ch. 8 Air Quality, Ch. 14 Material Assets Traffic and Transport and the Traffic and Transport Assessment, as well as the Energy Analysis Report, Building Life Cycle Assessment Report, Climate Change Impact Assessment and Site-Specific Flood Risk Assessment submitted with the planning application.

A full description of the Proposed Development can be found in Chapter 2 of this EIAR.

Climate change is recognised as one of the most serious global environmental problems and arguably the greatest challenge facing humanity today. While natural variations in climate over time are normal, anthropogenic activities have interfered greatly with the global atmospheric system by emitting substantial amounts of greenhouse gases (GHGs). This has caused a discernible effect on our global climate system, with continued change expected due to current and predicted trends of GHG emissions. In Ireland this is demonstrated by rising sea levels, changes in the ecosystem, extreme weather events and biodiversity loss.

The GHG assessment evaluates the project's climate impact across different life stages, considering a 50-year building life expectancy. It categorises greenhouse gas emissions into four main stages based on BS EN 15978: Production (embodied carbon from raw material extraction to product manufacturing), Pre-construction/Construction (impacts from product delivery and assembly), Operational (emissions from building operations, maintenance, and replacement), and End of Life (deconstruction and disposal activities). The assessment includes the first three stages, while the End-of-Life stage is excluded due to uncertainties in deconstruction methods.

This chapter focuses on Ireland’s obligations under the Paris Agreement (Climate Action Plan & Corresponding carbon budgets) in the context of the overall climatic impact of the presence and absence of the Proposed Development.

### 9.1.1 Quality Assurance and Competency of Experts

This chapter of the EIAR has been prepared by Aoife Gillen of DNV, Aoife holds a Master of Science (Hons) degree, is a Chartered Environmental Health Practitioner, and Certified Energy Manager. Aoife has worked as a Principal Sustainability Consultant with DNV since March 2024 and has built up experience preparing Climate Change Impact Assessments, Environmental Impact Assessment (EIA) Reports, Climate Chapters, Climate Impact Statements and Carbon assessments. Aoife has been involved in the following projects:

- N&C Kilmeague Quarry GHG Assessment
- Dyke Road Galway LRD Climate Change Impact Assessment
- DRES Properties Railpark Maynooth LRD Climate Chapter

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- Kilmore Quay Tourism Resort Climate Chapter
- LDA Galway Port LRD Climate Chapter
- Galway Port LRD Climate Chapter
- JSA Smurfit Paper Mills Climate Action & Sustainability Statement

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## 9.2 Greenhouse Gas Emissions in Ireland

Ireland's latest publicly available GHG emissions 1990-2024 (Aug 2025) are based on the Sustainable Energy Authority Ireland's (SEAI's) provisional energy balance released in June 2025 (EPA, 2025). Total national greenhouse gas emissions in 2024 (excluding LULUCF) are estimated to be 53.75 million tonnes carbon dioxide equivalent (Mt CO2eq) which is 2.0% lower (or 1.09 Mt CO2eq) than emissions in 2023 (54.85 Mt CO2eq) and follows a 6.8% decrease in emissions reported for 2023. Emissions in 2024 are 3.6% lower than the historical 1990 baseline. National total emissions including Land Use Land Use Change and Forestry (LULUCF) decreased by 1.9% to 57.65 Mt CO2eq. ETS4 and ESR emissions decreased by 7.4% and 0.5% respectively (EPA, 2025).

Arresting growth in emissions is a challenge in the context of a growing economy but one which must continue to be addressed by households, business, farmers, and communities if Ireland is to reap the benefits of a low-carbon economy.

The GHG emission inventory for 2024 is the fourth of ten years over which compliance with targets set in the European Union's Effort Sharing Regulation (EU 2018/842) will be assessed. This Regulation sets 2030 targets for emission reductions outside of the Emissions Trading Scheme (known as ESR emissions) and annual binding national limits for the period 2021-2030. Ireland's target is to reduce ESR emissions by 42% by 2030 compared with 2005 levels, with a number of flexibilities available to assist in achieving this. The ESR includes the sectors outside the scope of the EU Emissions Trading System (ETS) (such as Agriculture, Transport, Residential, Public Services and Commercial Services and Waste).

Ireland's ESR emissions annual limit for 2024 is 38.68 Mt CO2eq. Ireland's provisional 2024 GHG ESR emissions are 42.42 Mt CO2eq; this is 3.74 Mt CO2eq more than the annual limit for 2024, see Table 3 and Figure 9.1. This value is the national total emissions less emissions generated by stationary combustion, i.e., power plants, cement plant, and domestic aviation operations that are within the EU's emissions trading scheme. Cumulatively from 2021-2024 and after using the ETS flexibility, Ireland is not in compliance with the ESR by a net distance to target of -1.30 Mt CO2eq. In 2024, there is an exceedance of 1.83 Mt CO2eq above its Annual Emissions Allocation with the ETS flexibility. Agriculture and Transport accounted for 75.4% of total ESR emissions in 2024. The revised LULUCF Regulation (2023)10 incorporates new rules around LULUCF flexibilities for the period 2021-2025 and 2026-2030. There is a high degree of uncertainty relating to the availability of the LULUCF flexibility and, if available, the quantity of flexibility in each budgetary period (EPA, 2025).

The latest projections (May 2025) indicate that currently implemented measures (With Existing Measures) will achieve a reduction of 10% on 2005 levels by 2030, significantly short of the 42% reduction target. If measures in the higher ambition (With Additional Measures) scenario are implemented, EPA projections show that Ireland can achieve a reduction of 22% by 2030, still short of the 42% reduction target.

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In terms of the 2030 targets, the ESR provides two flexibilities (use of ETS allowances and credit from action undertaken in the land use, land use change and forestry (LULUCF) sector) to allow for a fair and cost-efficient achievement of the targets. New Regulations in 2023 mean there are new rules around LULUCF flexibility that incorporates split budgets 2021-2025 to 2026-2030. Additional analyses are needed to estimate the impact of the new rules on flexibilities. In the interim, based on latest LULUCF inventory and projections data, the maximum amount of LULUCF flexibility now projected to be available is 13.4 Mt $CO_2$eq in the first 5-year period (or 2.68 Mt $CO_2$eq per annum), with no flexibility available in the second 5-year period.

Ireland's GHG (GHG) emissions increased in the period from 1990 to 2001 where it peaked at 70.85 Mt $CO_2$ equivalent, before displaying a downward trend to 2014. Emissions increased by 4.0% and 3.8%, respectively in the years, 2015 and 2016 and remained relatively stable in 2017 and 2018, followed by a 3.0% decrease in 2019. In 2020 total national GHG emissions were 3.6% lower than 2019 emissions largely driven by the covid restrictions. The gradual lifting of covid restrictions in 2021 along with an increase in the use of coal and less renewables within electricity generation resulted in a 4.5% increase in emissions in 2021 compared to 2020. A 2.1% decrease in emissions was seen in 2022 compared to 2021, mainly due to a substantial decrease in residential sector emissions combined with decreases from industry, agriculture, and electricity generation. This was followed by a 6.8% reduction in emissions in 2023 and 2% in 2024 on 2023 levels. As of August 2025, and the most recent EPA data Ireland's GHG emissions have decreased by 3.6% from 1990-2024.

In relation to the GHGs; carbon dioxide ($CO_2$) accounted for 61.1% of the total, with methane ($CH_4$) and nitrous oxide ($N_2O$) contributing 28.9% and 8.8% as $CO_2$ equivalent, respectively and F-gases contributing 1.2% of the total as $CO_2$ equivalent.

Agriculture is the largest contributor to the overall emissions at 38.0% of the total (excluding LULUCF). Transport and Energy Industries are the second and third largest contributors at 21.7% and 13.3%, respectively. Residential and Manufacturing Combustion emissions account for 10.4% and 7.7%, respectively. These five sectors accounted for 91.1% of national total emissions in 2024. The remainder is made up by the Industrial Processes sector at 3.5%, F-Gases at 1.1%, Commercial Services at 1.4%, Public Services at 1.3% and Waste at 1.6%.

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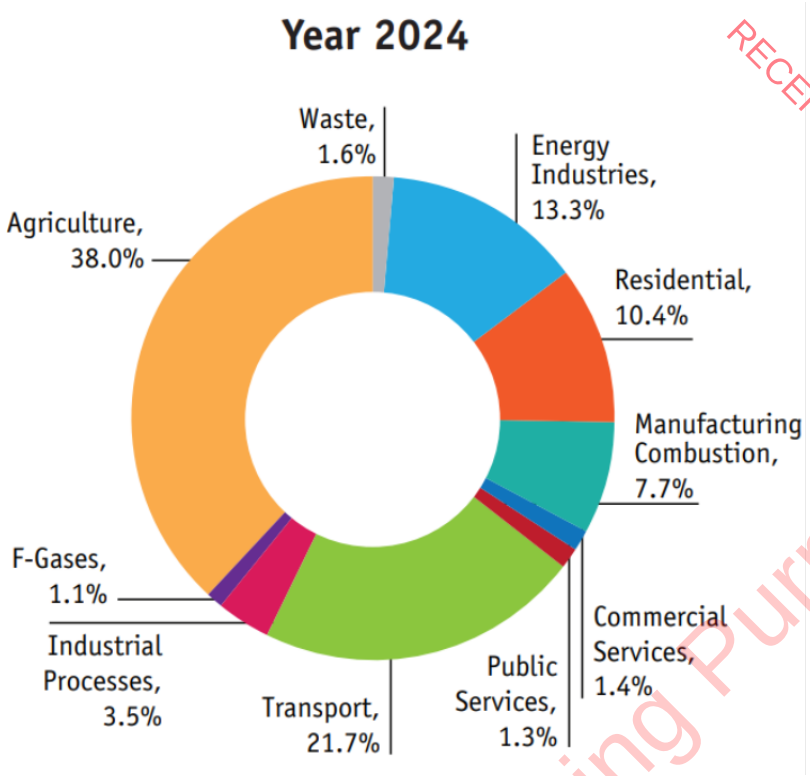



*Figure 9.1 – Ireland's Greenhouse Gas Emissions Share by Sector 2024 (Source: EPA, 2025)*

The Climate Change Advisory Council submitted its latest Annual Review 2025 in a series of sectoral reports between March and July 2025, with the final update published on August 8, 2025. Detailed key messages, including observations and recommendations for each sector (electricity; transport; built environment, enterprise and waste; agriculture, forestry, and other land use; and biodiversity), can be found at the beginning of each chapter in the annual review (CCAC, 2025).

The overall recommendations are as follows:

- Extreme Weather Preparedness: The Council urges the Government to establish a National Climate Damage Register to monitor and record the economic, social, and environmental impacts of extreme weather events. This is essential to improve Ireland's readiness for future climate shocks.
- Electricity Infrastructure Resilience: Following severe disruptions from Storms Darragh and Éowyn, the Council recommends urgent investment in grid modernization and resilience planning for critical services such as water, telecoms, and transport.
- Transport Sector Reform:
    - A full review of transport taxation (including vehicle registration tax, motor tax, excise duty, carbon tax, fuel pricing, and distance-based charges) is needed to align fiscal policy with climate goals.
    - Road space should be reallocated to support walking, cycling, and public transport.

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  - Planning reform must ensure new developments reduce transport demand and accelerate delivery of sustainable infrastructure.
  - Local authorities need support to implement low-emission zones, shuttle services, and carpooling incentives.
  - School transport must be expanded to reduce car journeys, with continued investment in walking and cycling initiatives.

- Agriculture and Land Use: The Council supports scaling up agri-environmental schemes like ACRES and implementing the National Biomethane Strategy to produce 1 TWh of renewable gas by 2025. Continued reductions in fertiliser use and methane emissions are essential.
- Energy Security and Fossil Fuel Phase-Out: The Council expresses serious concerns about fossil-powered data centres and LNG terminals. It recommends:
  - Halting new fossil fuel infrastructure approvals
  - Ensuring new data centre demand is met entirely by renewables
  - Full depreciation of fossil fuel assets by 2050, especially in the gas network

## 9.3 Legislation, Policy, and Guidance

The key legislation and guidance referenced in the preparation of the EIAR is outlined in Chapter 1: Introduction. Specific to Climate, the following legislation, guidance, and planning framework relevant to the consideration of this factor has informed the assessment as outlined below.

### 9.3.1 International Legislation/Commitments/Agreements

In March 1994, the United Nations Framework Convention on Climate Change (UNFCCC) was established as an intergovernmental effort to tackle the challenges posed by climate change. The Convention membership is almost universal, with 197 countries having ratified. Under the Convention, governments gather and share information on GHG emissions, national policies, and best practices. This information is then utilised to launch national strategies and international agreements to address GHG emissions. Following the formation of the UNFCCC, two major international climate change agreements were adopted: The Kyoto Protocol, and the Paris Agreement.

In April 1994, Ireland ratified the United Nations Framework Convention on Climate Change (UNFCCC) and subsequently signed the Kyoto Protocol in 1997. The Kyoto Protocol is an international agreement linked to the UNFCCC which commits its parties to legally binding emission reduction targets. In order to ensure compliance with the protocol, the Intergovernmental Panel on Climate Change (IPCC) has outlined detailed guidelines on compiling National Greenhouse Gas Inventories. These are designed to estimate and report on national inventories of anthropogenic GHG emissions and removals. Under Article 4 of the Kyoto Protocol, Ireland agreed to limit the net anthropogenic growth of the six named GHGs to 13% above the 1990 level, spanning the period 2008 to 2012 (IPPC, 2006).

The second commitment period of the Kyoto Protocol was established by the Doha amendment which was adopted in extremis on the 8th of December 2012, to impose quantified

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emission limitation and reduction commitments (QELRCs) to Annex I (developed country) Parties during a commitment period from 2013 to 2020. 38 developed countries, inclusive of the EU and its 28 member states, are participating. Under the Doha amendment, participating countries have committed to an 18% reduction in emissions from 1990 levels. The EU has committed to reducing emissions in this period to 20% below 1990 levels. Ireland's QELRCs for the period 2013 to 2020 is 80% of its base year emissions. Ireland's compliance with the Doha amendment was assessed based on the GHG inventory submission in 2022 for 1990-2020 data. Ireland complied procedurally with its submission obligations under the Doha Amendment, by delivering a complete 1990–2020 inventory in 2022 and its submission has been considered acceptable. As of October 2020, the Doha Amendment has received the required number of ratifications to enter into force. Once in force, the emission reduction commitments of participating developed countries and economies in transition (EITs) become legally binding.

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The Sustainable Development Goals (SDGs), also known as the Global Goals, were adopted by all United Nations Member States in 2015 as a universal call to action to end poverty, protect the planet, and ensure that all people enjoy peace and prosperity. The 17 SDGs are integrated—that is, they recognise that action in one area will affect outcomes in others, and that development must balance social, economic, and environmental sustainability. The creativity, knowhow, technology, and financial resources from all of society is necessary to achieve the SDGs in every context. At its heart, the SDGs are about global partnership for this call to action. No matter how large or small, and regardless of their industry, all companies can contribute to the SDGs through their sustainability and corporate social responsibility strategies, policies, and processes.




*Figure 9.2: UN Sustainable Development Goals*

Ireland has published a Sustainable Development Goals National Implementation Plan 2022-2024 to provide a whole-of-government approach to implementing these goals. Sustainable development, climate change and equity are intrinsically intertwined. Climate change impacts

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can be linked in one way or another to all 17 of the UN Sustainable Development Goals (SDGs). Climate action that considers co-impacts across other SDGs can increase efficiency, reduce costs and support early and ambitious climate action (DECC, 2022). A new plan is in the initial stages of development and is expected to be published in the first half of 2026.

### 9.3.2 European Legislation

***GHG Legislation***

In December 2015, the Paris Climate Change Conference (COP21) took place and was an important milestone in terms of international climate change agreements. The Paris Agreement sets out a global action plan to put the world on track to mitigate dangerous climate change by setting a global warming limit not to exceed 2°C above pre-industrial levels, with efforts to limit this to 1.5°C. As a contribution to the objectives of the agreement, countries have submitted national climate action plans (nationally determined contributions, (NDCs)). Under this agreement, governments agreed to come together every 5 years to assess the collective progress towards the long-term goals and inform Parties in updating and enhancing their nationally determined contributions. Ireland will contribute to the Paris Agreement through the NDC tabled by the EU on behalf of Member States in 2020, which commits to a 55% reduction in EU-wide emissions by 2030 compared to 1990. This is considered to be the current NDC maintained by the EU and its Member States under Article 4 of the Paris Agreement.

The EU has set itself targets for reducing its GHG emissions progressively up to 2050, these are outlined in the 2020 climate and energy package and the 2030 climate and energy policy framework. These targets are defined to assist the EU in transitioning to a low-carbon economy, as detailed in the 2050 low carbon roadmap. The 2020 package is a set of binding legislation to ensure that the EU meets its climate and energy targets for the year 2020 (EEA; 2020). There are three key targets outlined in the package which were set by the EU in 2007 and enacted in legislation in 2009:

- 20% reduction in GHG emissions from 1990 levels.
- 20% of EU energy to be from renewable sources; and
- 20% improvement in energy efficiency.

The 2030 climate and energy framework builds on the 2020 climate energy package and was adopted by EU leaders in October 2014. The framework sets three key targets for the year 2030:

- At least 40% cuts in GHG emissions from 1990 levels.
- At least 32% share for renewable energy; and
- At least 32.5% improvement in energy efficiency.

The EU has acted in several areas in order to meet these targets, including the introduction of the Emissions Trading System (ETS). The ETS is the key tool used by the EU in cutting GHG emissions from large-scale facilities in the power, industrial, and aviation sectors. Around 45% of the EU's GHG emissions are covered by the ETS.

As part of the European Green Deal, the EU Commission proposed in September 2020 to raise the 2030 greenhouse gas emission reduction target, including emissions and removals, to at least 55% compared to 1990. The European Climate Law came into force in July 2021

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and writes into law the goal set out in the European Green Deal for Europe's economy and society to become climate-neutral by 2050. The law also sets the intermediate target of reducing net greenhouse gas emissions by at least 55% by 2030, compared to 1990 levels.

### 9.3.3 National Legislation

***Climate Action and Low Carbon Development Act***

The Climate Action and Low Carbon Development Act 2015 (the principal act) set national climate policy on a statutory footing for the first time in Ireland, with the target of pursuing the transition to a low-carbon, climate-resilient, and environmentally sustainable economy by 2050. The principal act was subsequently amended by the Climate Action and Low Carbon Development (Amendment) Act 2021 (the '2021 Act') which sets Ireland on a legally binding path to net-Zero emissions no later than 2050, and to a 51% reduction in emissions by the end of this decade (Government of Ireland; 2015).

The 2021 Act provides a legally binding framework with clear targets and commitments set in law, and ensures the necessary structures and processes are embedded on a statutory basis to ensure Ireland achieves its national, EU and international climate goals and obligations in the near and long term. Policy amendments will involve the rapid electrification of the transport system: electric bikes, electric vehicles, and electric public transport. This will be enacted in tandem with a ban on new registrations of petrol and diesel cars from 2030. Furthermore, there will be a policy to incentivise behavioural changes by increased effective modal shift to walking, cycling and public transport infrastructure.

The 2021 Climate Act incorporates carbon budgets and sectoral emissions limits, defining the carbon budget as the total allowable greenhouse gas emissions during the budget period. Consequently, the Act has removed any mention of a national mitigation plan, replacing it with references to both former and latest versions of the Climate Action Plan, as well as a series of National Long Term Climate Action Strategies. Additionally, it has updated the national transition objective to a national climate objective, committing "to pursue and achieve, by no later than the end of the year 2050, the transition to a climate resilient, biodiversity rich, environmentally sustainable and climate neutral economy" (Government of Ireland; 2022).

Section 6B (12) of the 2021 Climate Act requires the Minister for the Environment, Climate and Communications to publish the approved carbon budget programme. In May 2022, the budgets were published and the total emissions allowed under each budget is set out below, as well as the average annual reduction for each 5-year period (DECC, 2022):

• 2021-2025: 295 Mt CO2eq - this represents an average reduction in emissions of 4.8% per annum for the first budget period.

• 2026-2030: 200 Mt CO2eq - this represents an average reduction in emissions of 8.3% per annum for the second budget period.

• 2031-2035: 151 Mt CO2eq - this represents an average reduction in emissions of 3.5% per annum for the third provisional budget.

To meet these targets, the government published a set of Sectoral Emissions Ceilings in July 2022, and each sector has been assigned a % reduction target on the 2018 baseline to achieve a ceiling of 295 Mt CO2eq by 2025 and 200 Mt CO2eq by 2030 (DECC, 2022).

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The assessment in this chapter has been prepared in accordance with, among other things, the 2021 Act and the EIA Directive.

The 2021 Act also introduces a requirement for each local authority to prepare a Climate Action Plan, which will include both mitigation and adaptation measures and be updated every five years. Local authority Development Plans will also align with their Climate Action Plan (DECC, 2021).

The Proposed Development is consistent with the following plans, strategies and objectives specified in section 15 of the Climate Action and Low Carbon Development Act 2015, as amended:

- The National Climate Objective.
- The most recent Climate Action Plan.
- The most recent National Long-Term Climate Action Strategy.
- The most recent National Adaptation Framework; and
- The objective of mitigating greenhouse gas emissions and adapting to the effects of climate change in the State.

The Act mandates the relevant Minister to develop the Climate Action Plan, the National Long-Term Climate Action Strategy, and the National Adaptation Framework to achieve the National Climate Objective (DECC, 2021). This objective of becoming 'climate neutral' by 2050 aligns with the EU's climate goal as established in Regulation (EU) No 2021/1119 (the 'European Climate Law'). The European Climate Law enshrines into EU legislation the target set by the European Green Deal for the EU to attain climate neutrality, or 'net zero' greenhouse gas emissions, by 2050.

The Climate Action Plan 2025 (CAP25) is the fourth annual update to Ireland's Climate Action 2019 (the plans are to be updated annually to ensure alignment with Ireland's legally binding economy-wide carbon budgets and sectoral ceilings) (DECC; 2023). This plan is the third to be prepared under the Climate Action and Low Carbon Development (Amendment) Act 2021, and following the introduction, in 2022, of economy-wide carbon budgets and sectoral emissions ceilings. The plan had a delayed launch on April 15th, 2025.

The plan implements the carbon budgets and sectoral emissions ceilings and sets out a roadmap for taking decisive action to halve our emissions by 2030 and reach net zero no later than 2050, as committed to in the Programme for Government. Climate Action Plan 2025 builds on Climate Action Plan 2024, outlining how Ireland will accelerate the actions required to respond to the climate crisis, putting climate solutions at the centre of Ireland's social and economic development (DECC; 2025). Climate Action Plan 2025 is a streamlined Climate Action Plan, to be read in conjunction with Climate Action Plan 2024. It is also the final Climate Action Plan of the first 5-year Carbon Budget – marking an important midpoint in what has been called the decade of climate action.

The supplementary Annex of Actions, approved by the Irish Government, provides the specific actions required to implement the targets set out in the Plan, and includes information regarding outputs, lead departments, timelines, and stakeholders. For 2025 a similar approach to the 2024 Annex has been implemented that will see only new, high-impact actions included in the Annex, while the full roadmap of actions to support the delivery of our climate targets remains within the Climate Action Plan itself (DECC; 2025).

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### 9.3.4 National Policy

***National Adaptation Framework (NAF)***

Ireland's second statutory National Adaptation Framework (NAF) was published on 5 June 2024 by Minister Eamon Ryan TD, replacing the original 2018 framework following its mandated five-year review under the Climate Action and Low Carbon Development Act 2015 1 2 3. The updated NAF continues to set out the national strategy to reduce the country's vulnerability to climate change impacts and to avail of potential benefits, while integrating lessons learned from recent extreme weather events and evolving climate science.

The 2025 NAF builds on the foundational work of the National Climate Change Adaptation Framework (NCCAF, 2012) and the first NAF (2018), but introduces several new principles and priorities:

- Avoiding maladaptation
- Nature-based Solutions
- Just Resilience (an evolution of the "just transition" concept)
- Greater consideration of socio-economic vulnerability
- Improved cross-sectoral cooperation

The framework maintains its whole-of-government and society approach, emphasizing collaboration with civil society, the private sector, and the research community. It also strengthens the enabling environment for adaptation through updated sectoral planning guidelines and local authority strategies.

Under the 2025 NAF all government departments must prepare or update Sectoral Adaptation Plans for priority areas, including two newly added sectors: Tourism and Built Environment/Planning. Local authorities continue to develop Local Adaptation Strategies, supported by new guidance documents such as the Heritage and Climate Adaptation Guidance for Local Authorities.

In terms of integration with broader climate policy the NAF is closely aligned with CAP25, approved in April 2025, which refines Ireland's roadmap to halve emissions by 2030 and reach net zero by 2050. CAP25 includes a focused Annex of Actions for 2025 and cross-cutting measures in energy, buildings, transport, enterprise, land use, and adaptation.

**The National Climate Change Risk Assessment (NCCRA)**

The National Climate Change Risk Assessment (NCCRA) was published in May 2024 (EPA, 2024). The NCCRA was required to be developed under Action 457 from the 2021 CAP (Government of Ireland 2021). Action 457 seeks to

*"Further develop Ireland's national climate change risk assessment capacity to identify the priority physical risks of climate change to Ireland".*

The NCCRA uses definitions of the risk determinants from the Intergovernmental Panel on Climate Change (IPCC) Risk Framework (IPCC 2023):

- Hazard – the potential occurrence of a natural or human-induced physical event or trend or physical impact that may cause loss of life, injury, or other health impacts, as well as damage and loss to property, infrastructure, livelihoods, service provision, ecosystems, and environmental resources.

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- Exposure – the presence of people, livelihoods, species or ecosystems, environmental functions, services, and resources, infrastructure, or economic, social, or cultural assets in places and settings that could be adversely affected.
- Vulnerability – the propensity or predisposition to be adversely affected. Vulnerability encompasses a variety of concepts including sensitivity.
- Risk – the potential for adverse consequences for human or ecological systems.

When considering risk, the NCCRA assesses exposure and vulnerability for two future climate change scenarios or Representative Concentration Pathways (RCPs):

- RCP4.5 was selected as it represents a scenario aligned with the global temperature trajectory.
- RCP8.5 was selected as it represents a high-emissions scenario and achieves the highest level of modelled temperature increases by the end of the century. Consequently, this scenario will result in the highest level of physical risk for Ireland, and therefore the greatest requirement for adaptation.

These scenarios align with a conservative approach to the assessment of risks to Ireland and assume that global emission reduction targets are not met. This aligns with the principle of precaution as stated in the NAF (DECC 2024). In addition to the future climate scenarios, the NCCRA assesses the risk from the future climate during the following timeframes:

- Present (~2030).
- Medium term (~2050); and
- Long term (~2100).

***Just Transition***

The 2021 Climate Action Plan sets out a just transition framework consisting of four principles to underpin both processes and implementation of all climate action policies and measures. Provisions under the 2021 CAP have been carried over to CAP25 without substantive changes. The present report primarily examines the impact of climate change (Government; 2021). However, we recommend that due consideration be given to the concept of a "just transition," aligning with the Irish Government's framework, to ensure a comprehensive approach to addressing the climate crisis that extends beyond mere climate action.

The just transition framework is made up of four principles (DECC; 2021):

- An integrated, structured, and evidence-based approach to identify and plan our response to just transition requirements.
- People are equipped with the right skills to be able to participate in and benefit from the future net zero economy.
- The costs are shared so that the impact is equitable, and existing inequalities are not exacerbated.
- Social dialogue to ensure impacted citizens and communities are empowered and are core to the transition process.

***Regional Policy***

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Action 8 of Ireland's second statutory National Adaptation Framework (NAF), published on 5 June 2024, reaffirms the establishment of four Climate Action Regional Offices (CAROs) to support climate adaptation at the local level 1 2. The Eastern & Midlands CARO remains one of these offices, with a continued mandate to assist local authorities in its region in preparing and implementing Local Authority Climate Action Plans (LACAPs).

Under the updated NAF and the Climate Action Plan 2025 (CAP25), CAROs play a critical role in:

- Capacity building within local government
- Mainstreaming adaptation into planning and development
- Facilitating cross-sectoral collaboration
- Supporting alignment with national climate objectives and sectoral adaptation plans

The Eastern & Midlands CARO specifically supports councils such as Meath, Louth, Dublin City, Fingal, South Dublin, and Dún Laoghaire-Rathdown, ensuring that their climate action plans reflect the latest national strategies and regional vulnerabilities. This updated framework emphasises Just Resilience, nature-based solutions, and community empowerment, aligning with the broader just transition principles carried forward from CAP21 into CAP25.

### 9.3.5 Meath County Council Climate Action Plan 2024-2029

In February 2024, Meath CC adopted the Meath County Council Climate Action Plan 2024-2029 (Meath CCAP). The Action Plan is the climate adaptation and mitigation strategy for the County, and sets out to achieve, by no later than the end of 2050, the transition to a climate resilient, biodiversity rich, environmentally sustainable and climate neutral County. Aligned to the Government's National Climate Objective (as set out in the national Climate Action Plan 2024), the new Plan outlines mitigation and adaptation climate action measures across the following six thematic areas:

- Governance and Leadership
- Energy and Built Environment
- Communities Resiliency and Transition
- Environment and Biodiversity
- Transport and Mobility
- Sustainability and Resource Management

The actions in these themes collectively address the main goals and targets of this plan:

1. 50% improvement in Meath CC's energy efficiency by 2030
2. 51% reduction in Meath CC's greenhouse gas emissions by 2030
3. To make Meath a climate resilient region for all, by reducing the impacts of future climate change-related events.
4. Empower the local community to engage with climate action through education, support, and ongoing collaboration and.
5. Enable socio-economic growth, placemaking and community development aligned to decarbonisation and a just transition.

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The Plan sets out how Meath CC will be responsible for enhancing climate resilience, increasing energy efficiency, and reducing greenhouse gas emissions across its own assets, services, and infrastructure to which it is fully accountable for.

In the development of the CAP, Meath CC has reviewed the risks posed by climate change for the County and the implications of these risks for the delivery of services by Meath CC. This has been achieved through a Climate Change Risk Assessment (CCRA) which identifies the likelihood of future climate hazards and their potential impacts. The CCRA has been undertaken, in accordance with 'Technical Annex B: Climate Change Risk Assessment' of the 'Local Authorities Climate Action Planning Guidelines'.

A qualitative CCRA supports the identification and prioritisation of potential future climate risks for more detailed analysis and provides a broad understanding of where adaptation actions could be required. The approach comprises of two phases, where both current and future risks and impacts are assessed.

### 9.3.6 Meath County Development Plan (CDP) 2021-2027

The new Meath CDP sets out the policy objectives and the overall strategy for the proper planning and sustainable development of the County over the plan period from 2021 to 2027.

The Climate Change chapter of the plan (Chapter 10) sets out detailed policy objectives in relation to climate action and the role of planning in climate change mitigation, climate change adaptation, and the transition towards a more climate resilient County. The Chapter addresses four key issues, namely:

- Energy Efficiency in Buildings.
- Renewable Energy.
- Decarbonising Motorised Transport.
- Agriculture, Land Management, Forestry, and Urban Greening.

These issues have been identified as being of particular significance in helping to achieve sustainable planning outcomes which will ultimately help to deliver a low carbon and a climate resilient County. Planning already plays a role in each of the key areas identified in the Meath CAP. Having regard to the headings set out in the Meath CAP, the Development Plan contains a range of policy objectives which aim to mitigate and adapt to climate change.

The creation of a climate resilient county is an overarching strategic outcome of the Meath CDP, and as such, the theme permeates the entire plan with a selection of policy objectives in multiple Chapters all contributing to aid in the transition of the county to a climate resilient low carbon society. Relevant policy objectives and their incorporation into the Proposed Development design have been considered in Section 6 of this report.

The Meath Climate Action Plan (2024) aims to create a cleaner, greener, and more resilient county. The Climate Action Plan has specific actions that have either been delivered, are in development stage or drafted for the future implementation.

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### 9.3.7 Guidance

The assessment has referred to national guidelines, where available, in addition to international standards and guidelines relating to the assessment of GHG emissions and associated climatic impact. These are summarised below:

- 2030 Climate and Energy Policy Framework (European Commission, 2014)
- 2030 EU Climate Target Plan (European Commission, 2021b)
- Assessing GHG Emissions and Evaluating their Significance the Institute of Sustainability & Environmental Professionals (ISEP formerly known as IEMA), 2022)
- Carbon Management in Infrastructure (European Commission, 2013)
- Climate Action and Low Carbon Development (Amendment) Act 2021 (No. 32 of 2021) (Government of Ireland, 2021)
- Climate Action Plan 2025 (Government of Ireland, 2025)
- Design Manual for Roads and Bridges (DMRB) Volume 11 Environmental Assessment, Section 3 Environmental Assessment Techniques, Part 14 LA 114 Climate (UK Highways Agency, 2019)
- Department of Housing, Planning, and Local Government. Guidelines for Planning Authorities and An Bord Pleanála on carrying out Environmental Impact Assessment (2018)
- European Commission. Guidance on Integrating Climate Change and Biodiversity into Environmental Impact Assessment (2013)
- European Commission. Technical Guidance on the Climate Proofing of Infrastructure in the Period 2021-2027 (2021a)
- IEMA. EIA Guide to: Climate Change Resilience and Adaptation (2020a)
- IEMA. GHG Management Hierarchy (2020b)
- IEMA. Environmental Impact Assessment Guide to: Assessing GHG Emissions and Evaluating their Significance (2022)
- Irish Green Building Council, Land Development Agency (LDA), and Environmental Protection Agency (EPA). The Carbon Designer for Ireland Tool
- Publicly Available Specification (PAS) 2080: 2016
- Transport Infrastructure Ireland (TII). GE-ENV-01106: TII Carbon Assessment Tool for Road and Light Rail Projects and User Guidance Document (2022c)
- Transport Infrastructure Ireland (TII). GE-GEN-01101: Guide to the Implementation of Sustainability for TII Projects (2023)
- Transport Infrastructure Ireland (TII). PE-ENV-01104: Climate Guidance for National Roads, Light Rail and Rural Cycleways (Offline & Greenways) – Overarching Technical Document (2022a)
- Transport Infrastructure Ireland (TII). PE-ENV-01105: Climate Assessment Standard for Proposed National Roads (2022b)
- Integrating Climate Change into Strategic Environmental Assessment in Ireland – A Guidance Note (EPA, 2015)
- Embodied Carbon and the Climate Impact of our Housing, Philip Comerford, The Housing Agency (2025)

## 9.4 Study Methodology

Carbon dioxide (CO2) emissions have a global climate warming effect. This is regardless of rate of release, location or the weather when released into the atmosphere. This is unlike pollutants that affect local air quality where the rate of release, location, and prevailing weather, as well as the amount of pollutant, determines the local concentrations and the impact. Local ambient concentrations of CO2 are not relevant for climate change and there are no limits or thresholds that can be applied to particular sources of carbon emissions. Any

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amount of CO2 released into the atmosphere will contribute to climate warming, the extent of which is determined by the magnitude of the release. Although CO2 emissions are typically expressed as kilogrammes or tonnes per year, there is a cumulative effect of these emissions because CO2 emissions have a warming effect which lasts for 100 years or more.

In this regard, the methodology adopted in this chapter covers two separate assessments – a greenhouse gas assessment (GHGA) and a climate change risk assessment (CCRA).

- Greenhouse Gas Emissions Assessment (GHGA) – This evaluation estimates the greenhouse gas emissions generated by a project throughout its entire lifespan. It then compares these emissions against pertinent Irish carbon budgets, targets, and policies to help gauge their significance.; The Transport Infrastructure Ireland (TII) Carbon assessment tool and the Irish Green Building Councils (IGBC) Lifecycle Assessment Tool have been used for this assessment and
- Climate Change Risk Assessment (CCRA) – This analysis examines how a changing climate could affect a project and its surrounding environment. The assessment considers a project's vulnerability to climate change and identifies adaptation measures to increase project resilience.

Further details on the methodologies undertaken are presented in the following paragraphs.

## 9.5 Study Area

Effects arising from the potential impacts on climate are considered to impact on a national to EU to global level and the study area for climate is the State for both the construction and operation phases.

A comprehensive description of the Proposed Development is presented in Chapter 2 of this EIAR.

## 9.6 Survey Methodology

### 9.6.1 Desk Surveys

A desktop study involving various national and international documents on climate change and analysis of synoptic meteorological data from the nearest Met Éireann station (Casement) was also carried out in order to compile this report. Attention has been focused on Ireland's obligations under the Paris Agreement in the context of the overall climatic impact of the presence and absence of the Proposed Development.

This analysis was undertaken by means of a desktop assessment based on available relevant guidance and information sources, and with reference to other chapters of this EIAR.

The following information sources have been consulted in relation to the assessment of climate aspects for the Proposed Development:

- Key material, resource, and cut/fill balance inputs from the description of the Proposed Development presented in Project Description and Construction Strategy of this EIAR.
- GHG assessment for pre-construction, construction, and operational life stages.
- Traffic figures from Traffic and Transportation.

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- Building Lifecycle and Energy, Utilities and Telecommunications Statement findings.
- Site Specific Flood Risk Assessment
- Estimates of likely waste volumes from the description of the Proposed Development presented in Project Description, Construction Strategy, and and Soils and Resource and Waste Management of this EIAR; and
- Environmental Protection Agency (EPA) Greenhouse Gas Emissions Inventories and Projections.

### 9.6.2 Climatics

**Summary of the Approach**

This DNV assessment was primarily based on the on-site climate risk projections generated CMIP5/CMIP6 climate model. The tool is typically used in combination with multiple Shared Socio-economic pathways/ Representative Concentration Pathways (SSPs/RCPs), which represent different future greenhouse gas concentration trajectories developed by the International Panel on Climate Change. The assessment was undertaken for two representative scenarios SSP1-2.6/RCP 4.5 and SSP5-8.5/RCP 8.5:

- SSP1-2.6/RCP 4.5 (transition from 2030) – this scenario leads to global warming exceeding 2 °C by 2100 but remaining below 3 °C. It is described as an intermediate scenario; and
- SSP5-8.5/RCP 8.5 (business as usual) – this scenario leads to global warming significantly exceeding 3 °C by 2100 and is generally taken as the basis for the worst-case climate change scenarios.

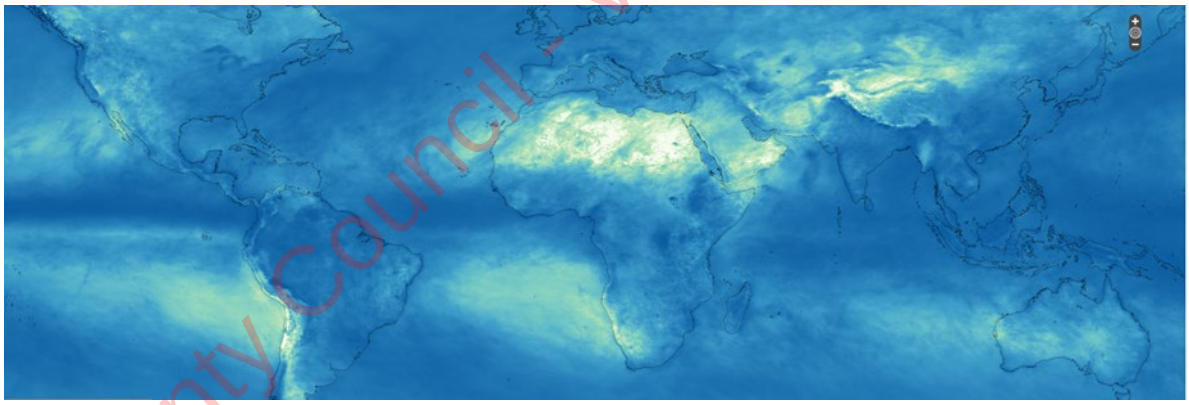


*Figure 9.3 Multi-model ensembled rainfall projection for 2050 (SSP5-8.5)*

We combine the global data from multiple IPCC models (ACCESS, GFDL-ESM4, HadGEM) to address the model uncertainty. Figure 9.3 showcases the multi-model ensembled of rainfall projection for 2050 under SSP5-8.5 scenario. Through DNV's proprietary method, we downscale and refine the global data to a 5km grid resolution for various regions like Australia, Contiguous United States (CONUS), Europe, and the United Kingdom. Leveraging these refined datasets, we can assess multi-hazard risk exposure for assets and portfolios across different geographical areas.

Under each scenario, nine categories of climate risk indices (20+ hazards) were assessed. The findings and recommendations are summarised in the following table. For the key indices, both the chronic risk (average trend) and acute risk (extremes) are provided. For example, the change in mean temperature and fire weather days are introduced in the temperature-related

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indices, as temperature is considered as the most relevant impact factor for climate change on asset resilience. Definitions for the derived hazards are summarised in the table followed.

**Table 9.5: Assessment of climate risk indices**

| Category | Hazard |
|---|---|
| Temperature related indices | Surface temperature |
| | Warm Days |
| | Fire Weather Days |
| | Heat Stress Index |
| Rainfall related extremes | Precipitation |
| | Heavy Precipitation Days |
| | Extreme Precipitation Days |
| | Flood Events |
| Aridity/Drought conditions | Water stress |
| Irradiance at surface | Surface reaching solar radiation |
| Cloud related | Cloud cover |
| Wind extremes | Wind speed |
| | Storm wind speed |
| Subsidence and landslide | Subsidence susceptibility index |
| | Landslide |
| Hailstorm | Hailstorm frequency |
| Lightning | Lightning density |

### 9.6.3 Field Surveys

No site-specific baseline surveys were undertaken as part of the assessment for climate due to the nature of the data which is desk based. The baseline data presented in this section is derived from the EPA Projections and Met Éireann monitoring network and may be taken as representative of the background climate within the Study Area.

### 9.6.4 Assessment Methodology

#### *9.6.4.1 Key Parameters for Assessment*

This assessment has been undertaken in line with the Institute of Environmental Management and Assessment (IEMA) guide 'Assessing Greenhouse Gas Emissions and Evaluating their Significance', 2nd Edition, 2022. The following aspects of the Proposed Development are assessed in this chapter:

- Potential direct greenhouse gas (GHG) emissions associated with the construction of the Proposed Development – this includes site clearance, embodied carbon, material transport, construction activities and waste management.
- Potential changes in GHG emissions associated with emissions during the operational phase of the Proposed Development; and
- Vulnerability of both the construction and operational phases of the Proposed Development to climate change.

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#### *9.6.4.2 GHG Appraisal Method -Construction Phase (Including Material Delivery and Spoil Removal)*

The GHG assessment accounts for various components relating to the project during different life stages to determine the total impact of the development on climate. The building life expectancy for the purposes of the assessment is 50 years, typical for this type of development. GHG emissions are attributed to four main categories, taken from BS EN 15978. These categories are:

- Production Stage (Embodied carbon); The carbon emissions at this stage originate from the extraction of raw materials, their transportation to manufacturing sites, and the primary energy consumed (along with the associated carbon impacts) during the conversion of these raw materials into construction products. These phases have been included in the scope of this assessment, and relevant information has been integrated into the TII tool (TII, 2022).
- Pre-construction/Construction Stage; These carbon impacts stem from the delivery of construction products to the site and their subsequent processing and assembly into the building. This aspect has been incorporated into the assessment's scope.
- Operational Stage: This encompasses a broad range of sources, including greenhouse gas emissions from building operations (energy), maintenance, and replacement which have been included in this assessment.
- End of Life Stage: The sustainable deconstruction and disposal of the existing building at the end of its life (Approx 50 years) consider the activities carried out by demolition contractors onsite. However, no credit is given for potential future carbon benefits from reusing or recycling materials into new products. This stage is not included in the scope of this study due to the variability and uncertainty surrounding deconstruction methods that may be employed at the end of the development's lifespan.

Information and data from the building lifecycle report, building energy ratings and energy statement have been utilised for this chapter.

Nearly Zero Energy Buildings' (NZEB) means a building that has a very high energy performance. The nearly zero or very low amount of energy required should be covered to a very significant extent by energy from renewable sources, including energy from renewable sources produced on-site or nearby.

The Dwelling Energy Assessment Procedure (DEAP) is used by BER assessors to calculate the energy performance and carbon dioxide emissions of a home's space heating, water heating, ventilation, and lighting. DEAP consists of a software tool and guidance manuals. BER Assessors use DEAP to publish Building Energy Rating (BER) certificates and advisory reports for homes. DEAP is also the compliance tool specified in Part L of the Irish Building Regulations.

The DEAP software is web-based and used to calculate the annual delivered energy consumption, primary energy consumption (kWh/m2/year) and carbon dioxide emissions (kgCO2/m2/y) for standardised occupancy. For all new builds, NZEB is equivalent to a 25% improvement in energy performance on the 2011 Building Regulations. Key changes to Part L for NZEB compliance include a Maximum Energy Performance Coefficient of 0.3, a Maximum Carbon Performance of 0.35 and a renewable Energy Ratio of 20%.

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The project design team have also utilised the Irish Green Building Councils (IGBC) Carbon Designer tool for Ireland. The Irish Green Building Council, in collaboration with One Click LCA Ltd., have developed the Carbon Designer for Ireland tool specifically for Irish building projects. Endorsed by the EPA and the Land Development Agency, this tool is compliant with standards such as EN 15978, ISO 21931–1, ISO 21929, and the data requirements of ISO 14040 & EN 15804. It is also aligned with LEED, BREEAM, and PAS 2080. The tool enables users to evaluate the carbon footprint of buildings in the early stages by using typical default materials and values. Users input details such as gross floor area, number of stories, and building frame type. After establishing a baseline with generic data, the tool facilitates the exploration of various options and the optimisation of carbon impacts. It identifies the most carbon-intensive elements within the building and suggests alternatives with lower carbon footprints. This provides a high-level initial assessment of the lifecycle carbon for the development based on basic information and default values with the option to edit these defaults as required to reduce impacts.

A key factor in reducing climate impact is the extent of proposed mitigation. Thus, using construction materials with lower carbon intensity can help reduce climate effects. This assessment aims not for perfection but to identify areas with significant carbon impact. We can then explore potential mitigation measures to reduce this impact. Outputs from the IGCB tool have been reviewed and implemented where relevant to reduce the climate impact of the Proposed Development.

Transport Infrastructure Ireland's (TII) proprietary carbon tool has been used to quantify carbon emissions from non-building elements such as material delivery, spoil removal, roads, and infrastructure. The carbon tool is a spreadsheet-based product, developed by TII, with the goal of identifying, estimating, and mitigating greenhouse gas emissions that accrue on large road and rail infrastructure projects. The carbon tool is closely aligned with guidance set out in PAS 20803 which suggests a modular structure for capturing and reporting carbon emissions according to lifecycle phase. Where the exact material needed isn't listed an estimate to a similar material type has been used. The construction waste and construction traffic information were reviewed from the traffic and waste chapters.

Design data for materials, earthworks and transport distances are based on input data from the design team. At this design stage it is appropriate to rely on best practice and assumptions in order to estimate lifecycle emissions. Where detailed designs are not available for various parts of the project, assumptions are made based on industry best practice and default values in the carbon tool. In particular, transport distances for materials have been estimated, as no specific suppliers have been selected at this early stage of the Proposed Development. This allows for an estimate of transport emissions, using an emissions factor for kg CO2eq/km in the carbon tool.

The use of the TII Carbon Tool was not considered suitable for the building elements of the Proposed Development. As the TII Carbon Tool was developed for road and infrastructure projects, the material types within the tool are specific to these types of developments. These material types are not fully appropriate for assessing the embodied carbon associated with the construction of buildings. Therefore, the carbon impact of the buildings was carried out using an alternative tool, the Carbon Designer for Ireland tool. The IGBC tool in combination with BER/NEAP assessments has been used for the building and operational carbon assessment.

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In addition to the measures outlined above, the GHG assessment has explicitly had regard to the Housing Agency's statutory report "Embodied Carbon and the Climate Impact of our Housing" (August 2025). This report highlights that embodied carbon—emissions arising from the extraction, manufacture, transport, and assembly of construction materials—can account for a substantial proportion of a dwelling's whole-life carbon footprint, particularly as operational emissions decline under NZEB standards. The report recommends early-stage design interventions, material efficiency, and circular economy principles as critical strategies for reducing embodied carbon. In line with these recommendations, the Proposed Development has incorporated lifecycle carbon assessment using the IGBC Carbon Designer for Ireland tool, prioritised low-carbon material choices, and embedded reuse and recycling measures within the Construction Waste Management Plan as outlined in the preceding sections.

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#### *9.6.4.3 GHG Appraisal Method - Operational Phase*

**Traffic Emissions**

As per the EU guidance document Guidance on Integrating Climate Change and Biodiversity into Environmental Impact Assessment (European Commission, 2013) the climate baseline is first established by reference to EPA data on annual GHG emissions (see Section 9.7 below). Thereafter the impact of the Proposed Development on climate is determined. Emissions from road traffic associated with the Proposed Development have the potential to emit carbon dioxide (CO2) which will impact climate.

The UK Highways Agency has published an updated DMRB guidance document in relation to climate impact assessments LA 114 Climate (UK Highways Agency, 2019). Due to the similarity of road infrastructure in the UK and Ireland this guidance is appropriate to apply in Ireland. The following scoping criteria are used to determine whether a detailed climate assessment is required for a Proposed Development during the operational stage. During the operational phase, if any of the road links impacted by the Proposed Development meet the below criteria then further assessment is required.

- A change of more than 10% in AADT.
- A change of more than 10% to the number of heavy-duty vehicles; and
- A change in daily average speed of more than 20 km/hr.

Based on those thresholds, junctions 1 and 2 exceed the 10% threshold mentioned above, thus need to be modelled. In contrast, Junctions 3 and 4 are below the 5% threshold and therefore no further assessment is required.

**Operational GHG Emissions**

The EU guidance (2013) also states indirect GHG emissions as a result of a development must be considered, this includes emissions associated with energy usage. In addition to the EU guidance, the Institute of Environmental Management and Assessment (IEMA) guidance note on 'Assessing Greenhouse Gas Emissions and Evaluating their Significance' (IEMA, 2022) states that "the crux of significance regarding impact on climate is not whether a project emits GHG emissions, nor even the magnitude of GHG emissions alone, but whether it contributes to reducing GHG emissions relative to a comparable baseline consistent with a trajectory towards net zero by 2050". Mitigation has taken a leading role within the guidance compared to the previous edition published in 2017. Early stakeholder engagement is key and

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therefore mitigation should be considered from the outset of the project and continue throughout the project's lifetime in order to maximise GHG emissions savings.

The Energy, Utilities and Telecommunications Statement prepared by McElligott and Building Lifecycle report prepared by Aramark and IGBC outputs in relation to this assessment have been reviewed and used to inform the operational phase climate assessment. This report outlines measures in relation to energy usage from the Proposed Development primarily in relation to heat and electricity. Several measures have been incorporated into the overall design of the development to reduce the impact to climate where possible, in line with the objectives of the IEMA guidance (2022).

#### *9.6.4.4 Assessment Criteria for GHG Emissions*

After the publication of the 2021 Climate Amendment Act in July 2021 and the 2021 CAP, the carbon budgets were approved and a series of sectoral emissions ceilings were published, including sectoral emissions ceilings for the residential sector (DECC, 2021). These ceilings will allow a comparison with the net CO2 projected GHG emissions from the Project.

The IEMA Climate Change principles (IEMA, 2020) document provides a section on how to assess GHG emissions in EIA and states:

- "When evaluating significance, all new GHG emissions contribute to a significant negative environmental effect; however, some projects will replace existing development that have higher GHG profiles. The significance of a project's emissions should therefore be based on its net impact, which may be positive or negative.
- "Where GHG emissions cannot be avoided, the EIA should aim to reduce the residual significance of a project's emissions at all stages".
- "Where GHG emissions remain significant but cannot be farther reduced… approaches to compensate the project's remaining emissions should be considered".

The process for determining the significance of effects involves two key steps: first, defining the magnitude of the impacts, and second, evaluating the sensitivity of the receptors (e.g., Ireland's National GHG targets). Although there are no specific project criteria for climate assessment, the project will be evaluated using the recommended IEMA significance determination approach. This evaluation will account for any embedded or planned mitigation measures included in the project design (IEMA, 2020).

According to LA 114, professional judgment is essential when contextualizing and assessing the significance of a project's GHG impact. In alignment with IEMA Guidance, LA 114 emphasises that the core of assessing significance is not just whether a project emits GHGs or the magnitude of these emissions alone, but rather whether the project helps reduce GHG emissions compared to a baseline that aligns with a net zero trajectory by 2050 (UK Highways Agency, 2019) .

Significance determination for emissions generated by the project in this assessment is based on the criteria presented in Table 9.1 as guided by IEMA in addition to the following two factors:

- The extent to which the trajectory of GHG emissions from the project aligns with Ireland's GHG trajectory to net zero by 2050; and
- The level of mitigation taking place.

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Table 9.1: Definition of Climate Significance

| Magnitude of Impact | Description |
|---|---|
| Major or Moderate Adverse (i.e. significant) | A project that follows a 'business-as-usual' or 'do minimum' approach and is not compatible with the net zero trajectory by 2050 or sectoral based transition to next zero targets, results in a significant adverse effect. It is down to the consultant completing the assessment to differentiate between the 'level' of significant adverse effects, e.g. 'moderate' or 'major' adverse effects. A project's impact can shift from significant adverse to non-significant effects by incorporating mitigation measures that substantially improve on business-as-usual and meet or exceed the science-based emissions trajectory of ongoing but declining emissions towards net zero. Meeting the minimum standards set through existing policy or regulation cannot necessarily be taken as evidence of avoiding a significant adverse effect. This is particularly true where policy lags behind the necessary levels of GHG emission reductions for a science based 1.5°C compatible trajectory towards net zero. |
| Minor Adverse (i.e. not significant) | A project that is compatible with the budgeted, science based 1.5°C trajectory (in terms of rate of emissions reduction) and which complies with up-to-date policy and 'good practice' reduction measures to achieve an impact that has a minor adverse effect but is not significant. The project may have residual impacts but is doing enough to align with, and contribute to, the relevant transition scenario. A 'minor adverse' or 'negligible' non-significant effect conclusion does not necessarily refer to the magnitude of GHG emissions being carbon neutral (i.e. zero on balance) but refers to the likelihood of avoiding severe climate change and achieving net zero by 2050. A 'minor adverse' effect or better is a high bar and indicates exemplary performance where a project meets or exceeds measures to achieve net zero earlier than 2050. |
| Negligible | A project that achieves emissions mitigation that goes substantially beyond the reduction trajectory, or substantially beyond existing and emerging policy compatible with that trajectory, and has minimal residual emissions, is assessed as having a negligible effect that is not significant. |
| Beneficial | A project that achieves emissions mitigation that goes substantially beyond the reduction trajectory, or substantially beyond existing and emerging policy compatible with that trajectory, and has minimal residual emissions, is assessed as having a negligible effect that is not significant. |

Ireland's carbon budgets provide a framework for understanding the significance of GHG emissions from the Proposed Development. This involves comparing the anticipated net GHG emissions of the development with the established carbon budgets. With the introduction of the Climate Action Act in 2021 and the Climate Action Plan 2025, sector-specific carbon budgets have been outlined for comparison with the development's net GHG emissions over its lifecycle. For the Transport sector, which emitted approximately 12 MtCO2e in 2018, the budget has a 2030 cap of 6 MtCO2e, reflecting a 50% reduction. Similarly, the Industry sector,

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with 2018 emissions of about 7 MtCO2e, has a 2030 ceiling of 4 MtCO2e, indicating a 35% reduction (see Table 9.3).

#### *9.6.4.5 Climate Change Risk Assessment-Criteria for Climate Vulnerability*

Climate change risk assessment is a risk assessment-based methodology for identifying potential climate impacts and assessing their severity. Carrying out a climate change risk assessment, at the simplest level, can be summarised into the following steps:

- identifying potential climate change risks to a scheme or project.
- assessing these risks (potentially prioritising to identify the most severe); and
- formulating mitigation actions to reduce the impact of the identified risks.

Any assessment of risk includes assessing the likelihood (or probability) and magnitude (or severity) of the impacts identified. This method is widespread within the climate change resilience assessments carried out by projects and cities to date.

The risk assessment assesses the likelihood and consequence of the impact occurring to each receptor, leading to the evaluation of the significance of the impact and the vulnerability of the Proposed Development to various climate hazards. The vulnerability is determined by combining the sensitivity and the exposure of the Proposed Development to various climate hazards.

To evaluate the likelihood of climate risk, we have utilised the baseline environmental information provided in Section 9.2, future climate change models, and insights from other experts involved in the Proposed Development (e.g., hydrologists and traffic consultants).

Initially, a preliminary Climate Change Risk Assessment (CCRA) focusing on the operational phase is performed, following the TII guidance PE-ENV-01104 (2022). This involves assessing the sensitivity of the development assets (i.e., receptors) and their exposure to climate change hazards. Each asset category within the Proposed Development must be assigned a level of sensitivity to climate hazards. PE-ENV-01104 outlines the asset categories and climate hazards that should be considered.

The specific asset categories will differ depending on the type of development and need to be determined on a case-by-case basis.

- **Asset Categories** Pavements; drainage; structures; utilities; landscaping; signs, light posts, buildings, and fences.
- **Climate Hazards** Flooding (coastal, pluvial, fluvial); extreme heat; extreme cold; wildfire; drought; extreme wind; lightning and hail; landslides; fog.

The sensitivity is based on a High, Medium, or Low rating with a score of 1 to 3 assigned as per the criteria below.

- **High Sensitivity** The climate hazard will or is likely to have a major impact on the asset category. This is a sensitivity score of 3.
- **Medium Sensitivity** It is possible or likely the climate hazard will have a moderate impact on the asset category. This is a sensitivity score of 2**.**
- **Low Sensitivity** It is possible the climate hazard will have a low or negligible impact on the asset category. This is a sensitivity score of 1.

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Once the sensitivities have been identified the exposure analysis can be completed. The exposure analysis involves determining the level of exposure of each climate hazard at the project location irrespective of the project type, for example: flooding could be a risk if the project location is next to a river in a floodplain. Exposure is assigned a level of High, Medium, or Low as per the below criteria.

- **High Exposure** It is almost certain or likely this climate hazard will occur at the project location i.e. might arise once to several times per year. This is an exposure score of 3.
- **Medium Exposure** It is possible this climate hazard will occur at the project location i.e. might arise a number of times in a decade. This is an exposure score of 2.
- **Low Exposure** It is unlikely or rare this climate hazard will occur at the project location i.e. might arise a number of times in a generation or in a lifetime. This is an exposure score of 1.

Once the sensitivity and exposure are categorised, a vulnerability analysis is conducted by multiplying the sensitivity and exposure to calculate the vulnerability.

***Vulnerability = Sensitivity x Exposure***

The vulnerability assessment takes any proposed mitigation into account. Table 9.2 details the vulnerability matrix; vulnerabilities are scored on a high, medium, and low scale. Where residual medium or high vulnerabilities exist, the assessment may need to be progressed to a detailed climate change risk assessment and further mitigation implemented to reduce risks.

According to TII guidance and EU technical guidance, if all identified vulnerabilities are reasonably ranked as low, a detailed climate risk assessment may not be necessary. In such cases, the impact of climate change on the development would be deemed insignificant.

However, if there are residual medium or high vulnerabilities, a more detailed climate change risk assessment may be required, along with the implementation of additional mitigation measures to address the risks. The TII guidance specifies that a construction phase Climate Change Risk Assessment (CCRA) is only required if a detailed CCRA is deemed necessary.

Table 9.2: Vulnerability Matrix

| | Exposure | | | |
|---|---|---|---|---|
| **Sensitivity** | | High (3) | Medium (2) | Low (1) |
| | High (3) | 9- High | 6- High | 3- Medium |
| | Medium (2) | 6- High | 4- Medium | 2- Low |
| | Low (1) | 3- Medium | 2- Low | 1- Low |

The vulnerability conclusions for each impact are based on, and incorporate, confirmed design and mitigation measures. Where the assessment concludes that the impact remains high, the project team may need to identify additional adaptation/EIA mitigation measures.

The screening CCRA i.e. vulnerability assessment, detailed in Section 9.9., did not identify any residual medium or high risks to the Proposed Development as a result of climate change. Therefore, a detailed CCRA for the construction and operational phase were scoped out.

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While a CCRA for the construction phase was not required, best practice mitigation against climate hazards is still recommended in Section 9.11

### 9.6.5 Consultation

Pre-application consultation was held with MCC, with a Section 247 pre-planning consultation meeting held on 6th November 2024 and a Section 32 LRD consultation meeting held on 5th March 2025, to explain the project and present technical and environmental information. Summary details of this meeting are provided by Hughes Planning & Development Consultants in their enclosed Statement of Consistency and Planning Report.

This material has been critically reviewed and has informed the development of this chapter, particularly in relation to requirements for sustainability and energy reporting, and the inclusion of a Strategic Flood Risk Assessment (SFRA) to address the need for a comprehensive flood management plan.

### 9.6.6 Difficulties Encountered / Limitations

Difficulties were encountered during the quantification of materials at the design stage in order to assess the embodied construction carbon. The exact volumes of materials, location of waste disposal sites, sourcing of products and technical specification for materials are finalised during the detailed design phase and by the appointed contractor. Throughout the assessment, efforts have been made to provide the most likely scenario of the embodied carbon assessment. Where it is required to make assumptions as the basis of the assessment presented here, these assumptions are based on advice from competent project designers and are clearly outlined within the chapter.

This is a standard and expected approach at this early stage, and assessment is appropriate on this basis. It is also important to frame these assessments in light of recent findings from the Housing Agency's report, 'Embodied Carbon and The Climate Impact of our Housing,' (2025) which highlights the significant role of embodied carbon in the built environment and underscores the need for comprehensive climate considerations throughout the entire lifecycle of housing developments.

## 9.7 Receiving Environment

Climate refers to the average weather conditions over a period of time, typically 30 years, while climate change denotes a substantial alteration in these average conditions. Although climate change can occur naturally, human activities in recent years have accelerated its pace through the emission of greenhouse gases (GHGs), as noted by the IPCC in 2015. These anthropogenic GHGs are changing the composition of the Earth's atmosphere, leading to an enhanced 'Greenhouse Effect.' This effect increases the atmosphere's capacity to trap heat, resulting in a rise in average global temperatures over the past four decades. The burning of fossil fuels, which releases significant amounts of carbon dioxide (CO2), has been and remains a major contributor to this enhanced greenhouse effect. The most critical GHGs include carbon dioxide (CO2), methane (CH4), and nitrous oxide (N2O).

Global climate change refers to the long-term shift in temperature and weather patterns on Earth, primarily driven by human activities such as burning fossil fuels, deforestation, and industrial processes. These activities increase the concentration of greenhouse gases in the

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atmosphere, enhancing the greenhouse effect and leading to a rise in average global temperatures. This warming impacts natural systems, causing more frequent and severe weather events, melting polar ice, rising sea levels, and disruptions to ecosystems and biodiversity. The effects of climate change are profound, affecting agriculture, water resources, health, and the economy, necessitating urgent and sustained efforts to mitigate and adapt to these changes.

Ireland is also experiencing the impacts of a changing climate with the rise in the annual surface air temperature by 0.8% since 1900. In addition to temperature, we are seeing increased rainfall and sea-level rise and observing changes in the frequency of extreme weather like storms, flooding, and drought (EPA, 2023). Examples of extreme weather would be Storm Ophelia in 2017 and the Beast from the East in 2018 to name two of the most impactful.

### 9.7.1 Current Baseline

#### *9.7.1.1 Existing GHG Emissions Baseline*

In 2023, Ireland's GHG emissions are estimated to be 58.82 million tonnes carbon dioxide equivalent (Mt $CO_2$eq), which is 6.1% lower (or 3.79 Mt $CO_2$eq) than emissions in 2022 (62.26 Mt $CO_2$eq) and follows a 3.0% decrease in emissions reported for 2022. Emissions are 3.3% below the historical 1990 baseline for the first time in 33 years.

Climate impacts are evaluated at a national level, considering national targets and sectoral emission ceilings. The study area for climate assessments is the Republic of Ireland, with the baseline established in the context of this geographic focus.

In 2023 emissions in the stationary ETS1 emissions decreased (17%) and emissions under the ESR (Effort Sharing Regulation) decreased (3.4%). When LULUCF is included, total national emissions decreased by 3.8% (EPA, 2024).

Decreased emissions in 2023 compared to 2022 were observed in the largest sectors except for transport which showed an increase of 0.3% shown highlighted red in the "Emissions change 2022-2023" table 8.3 below (EPA, 2024). Climate impacts are evaluated at a national level, considering national targets and sectoral emission ceilings. The study area for climate assessments is the Republic of Ireland, with the baseline established in the context of this geographic focus.

**Table 9.3 Emissions change 2022-2023 Ireland.**

| Mt $CO_2$ eq | 2022 | 2023 | % Change |
|---|---|---|---|
| Agriculture | 21.795 | 20.782 | -4.6% |
| Transport | 11.760 | 11.791 | 0.3% |
| Energy Industries | 10.003 | 7.845 | -21.6% |
| Residential | 5.753 | 5.346 | -7.1% |
| Manufacturing Combustion | 4.334 | 4.133 | -4.6% |
| Industrial Processes | 2.288 | 2.155 | -5.8% |
| F-Gases | 0.741 | 0.699 | -5.7% |

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| Mt $CO_2$ eq | 2022 | 2023 | % Change |
|---|---|---|---|
| Commercial Services | 0.751 | 0.732 | -2.5% |
| Public Services | 0.696 | 0.677 | -2.7% |
| Waste | 0.881 | 0.846 | -4.0% |
| LULUCF | 3.983 | 5.614 | 40.9% |
| **Total excluding LULUCF** | **59.003** | **55.007** | -6.8% |
| **Total including LULUCF** | **62.986** | **60.620** | -3.8% |

Emissions per capita decreased from 11.4 tonnes CO2eq/person in 2022 to 10.4 tonnes CO2eq/person in 2023. Ireland's average tonnes of GHG/capita over the last ten years were 12.1 tonnes. With recent CSO preliminary 2023 census data showing a population of 5.28 million people and with population projected to increase to 5.5 million in 2030, 5.9 million in 2040 and 6.2 million by 2050, per capita emissions need to reduce significantly. At current per capita emission levels, each additional 500,000 people would contribute an additional 5 million tonnes of CO2eq annually (EPA, 2024).

The EPA also publishes GHG emission projections to 2030. Table 9.4 shows that in the With Additional Measures (WAM) scenario the percentage reduction is not achieved for electricity, transport, industry, agriculture and other (comprises waste, fluorinated-gases, and petroleum refining). Looking at the overall percentage emissions reduction target of -51% by 2030 compared to 2018, the projections are indicating a significant shortfall with only a -29% reduction achieved thus predicting that Ireland will not achieve its legally binding climate target (EPA, 2024).

**Table 9.4: Assessment of Achievement of Sectoral Percentage Targets under the With Additional Measures scenario (EPA)**

| Sector | Emissions 2018 (Mt $CO_2$eq) | Projected Emissions 2030 (Mt $CO_2$eq) | Percentage Change 2030 vs 2018 | Target Reduction 2030 vs 2018 | Percentage Change (Reported in 2024) 2030 v 2018 |
|---|---|---|---|---|---|
| Electricity | 10.2 | 3.1 | -0.7 | -75% | -0.66 |
| Transport | 12.3 | 9.7 | -0.21 | -50% | -0.29 |
| Buildings (Residential) | 7 | 5.4 | -0.22 | -40% | -0.4 |
| Buildings (Commercial & Public) | 1.5 | 1 | -0.36 | -45% | -0.6 |
| Industry | 7 | 6.1 | -0.12 | -35% | -0.24 |
| Agriculture | 21.4 | 18 | -0.16 | -25% | -0.18 |
| Other | 2.1 | 1.6 | -0.25 | -50% | -0.25 |

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| Sector | Emissions 2018 (Mt $CO_2$eq) | Projected Emissions 2030 (Mt $CO_2$eq) | Percentage Change 2030 vs 2018 | Target Reduction 2030 vs 2018 | Percentage Change (Reported in 2024) 2030 v 2018 |
|---|---|---|---|---|---|
| LULUCF*<br>*(no ceiling currently)* | 4 | 5.5 | 0.39 | N/A | 0.17 |
| Total with LULUCF | 65.6 | 50.6 | -0.23 | -51% | -0.29 |

**A direct comparison of emissions in the Agriculture sector against its Sectoral Emission Ceilings is no longer viable.*

*** Waste, F-gases, and Petroleum Refining*

****National objective includes LULUCF*

### 9.7.2 Future GHG Baseline

In line with TII and IEMA Guidance the future baseline is a trajectory towards net zero by 2050, "whether it [the project] contributes to reducing GHG emissions relative to a comparable baseline consistent with a trajectory towards net zero by 2050" (IEMA, 2022). The future baseline for GHG emissions assessment will be considered in relation to the future Irish climate targets which the assessment results will be compared against.

The future baseline will be based on Ireland achieving the targets outlined in the Climate Action Plan 2025 (CAP25) and subsequent Climate Action Plans, as well as meeting binding EU targets for 2030. In order to meet the commitments under the Paris Agreement, the European Union (EU) enacted '*Regulation (EU) 2018/842 on binding annual GHG emission reductions by Member States from 2021 to 2030 contributing to climate action to meet commitments under the Paris Agreement and amending Regulation (EU) No. 525/2013*' (hereafter referred to as the Regulation). The Regulation aims to deliver, collectively by the EU in the most cost-effective manner possible, reductions in GHG emissions from the Emission Trading Scheme (ETS) and non-ETS sectors amounting to 43% and 30%, respectively, by 2030 compared to 2005. The Regulation was amended in April 2023, and Ireland must now limit its greenhouse gas emissions by at least 42% by 2030. The ETS is an EU-wide scheme which regulates the GHG emissions of larger industrial emitters including electricity generation, cement manufacturing and heavy industry. The non-ETS sector includes all domestic GHG emitters which do not fall under the ETS scheme and thus includes GHG emissions from transport, residential and commercial buildings, and agriculture.

### 9.7.3 Current CCRA Baseline

Impacts to the Proposed Development as a result of climate change involve increases in temperatures and increases in the number of rainfall days per year. Ireland has observed increases in the annual rainfall in the north and west of the country, with small increases or decreases in the south and east including in the region where the Proposed Development will be located. The EPA (2021) has compiled a list of potential adverse effects as a result of

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climate change including the following which may be of relevance to the Proposed Development:

- Increase of 1 to 4 degrees Celsius in average temperature.
- More intense storms and rainfall events.
- Increased likelihood and magnitude of river and coastal flooding.
- Water shortages in summer in the east.
- Adverse impacts on water quality; and
- Changes in distribution of plant and animal species

The Proposed Development area experiences a temperate, maritime climate, resulting in mild winters and cool summers. The Met Éireann weather station at Dublin Airport, County Dublin, is the nearest weather and climate monitoring station to the Proposed Development that has meteorological data recorded for the 29-year period from 1991 to 2020 (Met Eireann, 2023). The monitoring station is located approximately 34km south of the Proposed Development at its nearest point. Meteorological data recorded at Dublin Airport over the 29-year period from 1991 to 2020 indicates that the wettest months were October and November, and the driest month on average was March. July was the warmest month with a mean temperature of 15.4°C.

Met Éireann recent weather patterns were analysed, they highlight a marked rise in both the frequency and intensity of storms. Notable examples include Storm Darwin in February 2014, Storm Emma in March 2018, and Storm Ophelia in October 2018.

Annual rainfall from 1991 to 2020 was 5% higher compared to the 30-year period from 1961 to 1990. In recent years, Dublin Airport has experienced significant rainfall events. Notably, on March 1, 2024, the airport recorded its highest daily rainfall for March on record, with 45.3 mm of precipitation. Additionally, in March 2023, Dublin Airport experienced its wettest March since 1947, with a total of 119.3 mm of rainfall, representing 227% of the long-term average.

The latest data from Met Éireann's 'The Status of Irish Climate 2020 Report' highlights that the 10-year period from 2006-2015 was the wettest recorded decade (Met Eireann, 2021).

Met Éireann's 2023 Climate Statement states 2023's average shaded air temperature in Ireland is provisionally 11.20 °C, which is 1.65°C above the 1961-1990 long-term average. Previous to this 2022 was the warmest year on record, however 2023 was 0.38 °C warmer (Met Eireann, 2023).

In 2023, Ireland experienced above-average rainfall, including the warmest June on record and the wettest March and July. Since April 2023, record-high sea surface temperatures (SST) were observed, with a severe marine heatwave affecting the western coast of Ireland in June. This marine heatwave contributed to the unprecedented rainfall in July (Met Eireann, 2024).

Recent weather patterns and extreme weather records from Met Éireann have been examined. Given the exceptional data from 2023, Met Éireann notes that current Irish climate projections predict continued warming, including milder winters. The record temperatures increase the likelihood of extreme weather events, leading to longer dry periods and heavier rainfall. Additionally, sea level rise is expected to cause more storm surges and coastal flooding, with an increase in compound events where coastal surges and extreme rainfall occur simultaneously. While Met Éireann is confident that maximum rainfall rates will rise,

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there is less certainty about how the frequency or intensity of storms will change with climate change.

Surface air temperature plays a crucial role in climate analysis, influencing ecosystems, livelihoods, and human activities. Changes in temperature affect various sectors, including health, agriculture, and energy demand. In Ireland, over a century of consistent temperature measurements is available. Globally, the average surface air temperature has increased by 0.85°C over the past 100 years, with the rate of warming nearly doubling since 1975, reaching an equivalent of a 1.65°C rise per century. The five warmest years on record globally were 2015–2019, which is notable since temperature records began in the mid to late 1800s. Hotter, drier summers and milder, wetter winters are now more common in many parts of the world (Met Éireann 2020).

### 9.7.4 Future CCRA Baseline

The EPA-funded research project 'Ensemble of Regional Climate Model Projections for Ireland Report No. 159' (EPA 2015) forecasts significant reductions in mean annual, spring, and summer precipitation, with longer dry spells expected. By 2050, the most pronounced decreases are projected for summer, with reductions ranging from 0% to 13% under medium-to-low emission scenarios and 3% to 20% under high emission scenarios. In contrast, heavy precipitation during winter and autumn is expected to increase by up to 20%. Additionally, the number of extended dry periods during autumn and summer is anticipated to rise considerably by mid-century.

The report suggests that the total number of North Atlantic cyclones is expected to decrease by 10%, along with a reduction in average mean sea-level pressure of 1.5 hectopascals (hPa) across all seasons by mid-century. Wind energy is anticipated to decline in spring, summer, and autumn, with an increase expected in winter. Additionally, the predicted rise in extreme storm activity could negatively impact future wind energy supply.

The EPA's State of the Irish Environment Report (Chapter 4: Climate Change) further highlights that projections indicate that the comprehensive implementation of additional policies and measures from the 2019 Climate Action Plan could reduce Ireland's total GHG emissions by up to 25 percent by 2030 compared to 2020 levels. Climate change is already a current issue in Ireland, with a temperature increase of approximately 0.8°C since 1900. The report further highlights the importance of strong public sector climate leadership and the rapid acceleration of decarbonisation efforts if we are to halt the climate crisis (EPA, 2024).

Accurate climate projections are a key scientific input for national policymakers when planning for, and adapting to, the challenges posed by climate change. Climate projections are produced using climate models, which have been developed by scientists over recent decades and are capable of simulating Earth's past, present, and future climate. Global Climate Models (GCMs) are used to model the global impacts on Earth's climate of increasing greenhouse gas concentrations in the atmosphere at a resolution of ~50km or coarser. Regional Climate Models (RCMs) are used to capture key small-scale atmospheric features on the scale of 1-10km, such as local convection and wind gusts. Multi-model ensembles are often used in climate prediction studies to quantify associated model uncertainty.

RCMs utilise the output of GCMs and model regional climates at higher spatial resolutions; this process is known as dynamic downscaling. This approach allows key climate variables to

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be modelled more precisely, including precipitation; near-surface temperature; and the number and intensity of low-pressure systems. Low pressure systems are the primary driver of precipitation and wind affecting the country; therefore, the added value of RCMs in the modelling of low-pressure systems is of particular importance for Ireland.

Concentration trajectories known as Representative Concentration Pathways (RCPs) were utilised in EPA Research Report No.339 High resolution Climate Projections for Ireland – A Multi-model Ensemble Approach (EPA 2020). For the EPA study, two RCPs were chosen, RCP4.5 and RCP8.5. RCP4.5 is considered an intermediate scenario, while RCP8.5 is considered to be representative of a potential worst-case scenario.

The future climate was modelled using both the Representative Concentration Pathway 4.5 (RCP4.5) (medium-low) and RCP8.5 (high) scenarios. The study suggests that by mid-century (2041–2060), average annual temperatures are projected to rise by 1–1.2°C under RCP4.5 and 1.3–1.6°C under RCP8.5, with the most significant increases in the east. Temperature extremes are expected to become more pronounced, with summer daytime and winter night-time temperatures increasing by 1–2.4°C. The number of frost and ice days is projected to decrease by approximately 50%. Summer heatwaves are likely to become more frequent, especially in the south. Additionally, precipitation is expected to become more variable, with a significant increase in both dry periods and heavy rainfall events.

Established in June 2022, the National Framework for Climate Services (NFCS) aims to streamline the provision of climate services in Ireland and will be led by Met Éireann. The NFCS is designed to facilitate the co-production, delivery, and utilization of precise, actionable, and accessible climate information and tools to enhance climate resilience planning and decision-making. In parallel with the NFCS, ongoing research is being conducted through the TRANSLATE project. This initiative, led by climate researchers from the University of Galway's Irish Centre for High End Computing (ICHEC) and University College Cork's SFI Research Centre for Energy, Climate, and Marine (MaREI), with support from Met Éireann climatologists, is focused on advancing climate science. TRANSLATE generates outputs using internationally reviewed models from CORDEX and CMIP5, with Representative Concentration Pathways (RCPs) offering a range of possible futures based on different human activity scenarios.

TRANSLATE offers the first standardised and bias-corrected national climate projections for Ireland, designed to support climate risk decision-making across various sectors, such as transport, energy, and water. It provides insights into potential changes in Ireland’s climate under global temperature increases of 1.5˚C, 2˚C, 2.5˚C, 3˚C, or 4˚Cs. These projections generally align with previous forecasts for Ireland. The country's climate is heavily influenced by the Atlantic Meridional Overturning Circulation (AMOC), a major system of ocean currents, including the Gulf Stream, which features a northward flow of warm water and a southward flow of cold water. This system prevents Ireland from experiencing the extreme temperatures seen in other countries at similar latitudes. Recent studies suggest that the AMOC may weaken by 30–40% by 2100, leading to cooler North Atlantic Sea Surface Temperatures (SSTs). Despite this, Ireland is expected to continue warming, though the cooling effect of the AMOC might moderate the warming relative to continental Europe. Additionally, a weakened AMOC is anticipated to contribute to further sea level rise around Ireland. Climate change will cause significant shifts in temperature and rainfall patterns: average summer temperatures could rise by more than 2°C, summer rainfall could decrease by 9%, and winter rainfall could increase by 24%. Future projections also include a tenfold rise in the frequency of summer nights with temperatures exceeding 15°C by the end of the century, a decrease in the

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frequency of cold winter nights, and an increase in heatwaves. In Ireland (a heatwave is defined as a period of five consecutive days with daily maximum temperatures above 25°C).

### 9.7.5 Evolution of the Environment in the Absence of the Project

Annex IV of the EIA Directive sets out the information required to be included in an EIAR. This includes:

*"a description of the relevant aspects of the current state of the environment (baseline scenario) and an outline of the likely evolution thereof without implementation of the Proposed Project as far as natural changes from the baseline scenario can be assessed with reasonable effort on the basis of the availability of environmental information and scientific knowledge".*

In the event that the Proposed Development does not proceed, an assessment of the future baseline conditions has been carried out and is described within this section.

## 9.8 Climatics Multi-Climate Hazard Analysis for (53.715844, -6.391134)

**Table 9.5: Assessment of Climate Risk Indices**

| Category | Hazard | Summary of Findings | Exposure Level |
|---|---|---|---|
| Temperature related indices | Surface temperature | **Mean Temperature**<br>The historic mean annual temperature in the area is 9.44°C. This is projected to increase to 10.38°C (+0.94°C) under SSP1-2.6 (optimistic) and 10.93°C (+1.49°C) under SSP5-8.5 (business as usual or pessimistic scenario) for 2050. | **3** |
| | Warm Days | **Warm Days**<br>Warm days are defined as when the maximum temperature is beyond 90% percentile. The historic warm days in the area are 13.54% per year and this it projected to increase to 27.06% under SSP1-2.6 and 33.21% under SSP5-8.5 scenarios for 2050. | **3** |
| | Fire Weather Days | **Fire Weather Days**<br>The historic fire weather days in the area were 22.12 days per year. This is predicted to increase to 32.27 (+45.89%) days under SSP1-2.6 and 40.50 (+83.12%) days under SSP5-8.5 for 2050. | **3** |
| | Heat Stress Index | **Heat Stress Index**<br>The historic heat stress index in the area is 12.35. And this is projected to increase to 13.56 under SSP1-2.6 and 14.14 under SSP5-8.5 scenarios for 2050. | **2** |

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| Category | Hazard | Summary of Findings | Exposure Level |
|---|---|---|---|
| Rainfall related extremes | Precipitation | **Average Annual Precipitation**<br>Historic average precipitation in the area was 1028.14 mm/year. This is projected to increase to 1040.55 mm/year under SSP1-2.6 and 1032.66 mm/year under SSP5-8.5 for 2050. | **5** |
| | Heavy Precipitation Days | **Heavy Precipitation Days**<br>Precipitation is defined as heavy precipitation. The historic average heavy precipitation days in the area was 25.39 days in a year. This is projected to increase to 26.73 days under SSP1-2.6 and 27.24 days under SSP5-8.5 for 2050. | **5** |
| | Extreme Precipitation Days | **Extreme Precipitation Days**<br>Precipitation over 99% quantile is defined as extreme precipitation. The historic average extreme precipitation is 59.45 mm for a year, and this is projected to increase to 76.69 mm (+29.01%) under SSP1-2.6 and 78.20 mm (+31.54%) under SSP5-8.5 for 2050. | **5** |
| | Flood Events | **Flood Events**<br>The historic inundation of 100-yr flood event is 0.00 m. This is projected to 0.00 m (0%) under SSP1-2.6 and 0.00 m (0%) under SSP5-8.5 for 2050. | **1** |
| Aridity/Drought conditions | Water stress | **Water Stress**<br>The water stress index ranges from 1 to 5, with 1 indicating low stress and 5 indicating high stress. The historic water stress is rated as 2.00. And this is projected to increase to 3.00 under SSP1-2.6 and 3.00 under SSP5-8.5 for 2050. | **3** |
| Irradiance at surface | Surface reading solar radiation | **Surface Reaching Solar Radiation**<br>The surface reaching solar radiation in the area was historically 118.58 W/m² and this is projected to increase to 124.20 W/m² under SSP1-2.6 and 122.99 W/m² under SSP5-8.5 for 2050. | **2** |
| Cloud related | Cloud cover | **Cloud Cover**<br>Historic average cloud cover in the area was 79.01%. This is projected to decrease to 78.51% (-0.50%) under SSP1-2.6 and 77.46% (-1.55%) under SSP5-8.5 for 2050. | **5** |
| | Wind speed | **Wind Speed** | **5** |

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| Category | Hazard | Summary of Findings | Exposure Level |
|---|---|---|---|
| Wind extremes | | Historic average wind speed in the area was 5.20 m/s. This is projected to be 4.98 m/s under SSP1-2.6 and 5.07 m/s under SSP5-8.5 for 2050. | |
| | Storm wind speed | **Storm Wind Speed** The historic storm wind speed of the area is 15.62 m/s, and this is predicted to increase to 17.12 m/s (+9.62%) for SSP5-8.5 scenario for 2050. | **4** |
| Landslide | Landslide | **Landslide** The historic landslide in the area is 0, indicating minor impact from landslide events. Low risk | **N/A** |
| Hailstorm | Hailstorm frequency | **Hailstorm Frequency** Historical hailstorms in this location were 0.09 events/year. This denotes that the hailstorm has a minimal impact in this area, which is ideal for a storage unit. | **N/A** |
| Lightning | Lightning density | **Lightning Density** The historic lightning density in the area was smaller than 0.02 events per year. It indicates a minor impact from lightning events. | **N/A** |

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## 9.9 Potential Effect of the Proposed Development

During both the construction and operational phases of the development, there is potential for various greenhouse gas emissions to be released into the atmosphere. According to TII guidance, the significance of these GHG emissions on the climate is evaluated based on the total emissions across all stages of the Proposed Development.

### 9.9.1 Construction Phase GHG Assessment

The TII Carbon toolkit was utilised to quantify the construction phase embedded carbon for the Proposed Development. This toolkit can quantify carbon in infrastructure projects using Ireland-specific emission factors and data. Detailed project information including tonnage of materials was obtained from the Engineering Design Team.

The project design team have also utilised the Irish Green Building Councils (IGBC) Carbon Designer tool for Ireland. This provides a high-level initial assessment of the lifecycle carbon for the development based on basic information and default values with the option to edit these defaults as required to reduce effects.

Greenhouse gas emissions have been quantified at all aspects of the construction phase including the following stages:

- Production stage: Embodied carbon is the carbon contained within a material or product. It is the sum of all carbon emissions that have been generated during the extraction, processing, and manufacturing of a particular product. Mitigation will be required as part of the demolition works to reduce the embodied carbon impact. Where possible demolished materials should be re-used on site or sent to a suitably licenced waste facility for re-use on other sites. Brickwork, concrete, steel, and glazing are materials which have the potential for very high embodied carbon but also have the potential for recovery or recycling. Specific items have been identified within the Construction Waste Management Plan, and it has been detailed whether these can be salvaged and re-used on site or if they are suitable for salvage and re-use off site by providing them to a salvage merchant. The Construction Waste Management Plan details the embodied carbon mitigation measures required for the demolition phase of the development
- Transportation to site: emissions associated with the carbon miles of the project materials. The impact of transporting materials from factory/source to site to facilitate construction is reported separately, please refer to the air quality chapter. A series of assumptions are made about the variables that impact transport emissions (material density, vehicle type, vehicle capacity and distance travelled) and assuming that the material may be transported from sources locally within 50km, regionally within 100km and nationally within 250km.
- Site Operations/Construction activities:
    - Site clearance emissions associated with plant and machinery required to clear the site. The carbon tool has a range of assigned land use categories for estimating site clearance. Different land use types have higher or lower carbon intensity for site clearance, which is linked to the energy required to clear the site.
    - Emissions arising from excavation activities based on the energy used in excavation activities. Energy expenditure varies depending on the type of ground to be excavated, e.g., rock excavation is much more energy intensive than topsoil excavation.
    - Construction activities cover carbon emissions generated during the construction of the Proposed Development based on the scale and duration of the project; and
    - The generation of waste during the construction phase has potential for climate impact and the nature and scale of this impact depends on the type and volume of waste generated coupled with the nature of the waste treatment (reuse, recycling, recovery, or disposal).
- Material replacement & refurbishment: Ongoing material refurbishment and replacement throughout the lifetime of the development is included within this stage of the GHG assessment; these are default values based on the typical maintenance requirements for the chosen material types over the assumed 50-year lifetime

The results of the assessment of the above stages using the TII and IGBC tools are presented in Table 9.7 and Figure 9.4. The results indicate that the total GHG emissions generated as a result of the construction of the Proposed Development are 8,783 tonnes CO2eq.

The carbon assessment has identified hotspots for embodied carbon emissions, particularly those associated with building materials. These emissions have been calculated using

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standard default materials for different building types within the OneClick tool, as detailed material information was not available at this stage of the project. Additionally, the average material types from the TII Carbon Tool were utilised for this assessment as more specific information is not yet available.

As anticipated construction materials represent the largest portion of carbon emissions for the Proposed Development, constituting about 75% of the total embodied carbon emissions during the construction phase across the different buildings. The highest carbon effect is observed in the external walls, beams, floors, and roofs, based on the standard default values and assumptions used in the carbon calculations. The rest of the construction phase's embodied carbon emissions come from transportation to the site, site operations, and material replacement.

The total embodied carbon for the construction phase, including the maintenance and replacement of materials throughout the development's lifetime, has been calculated at 8,783 tonnes CO2e (see Table 9.6 and Figure 9.4). Since the overall GHG emissions from the development cannot be directly compared to a single sector's 2030 carbon budget, the emissions are categorised into different assessment areas. These categories must be individually compared to the relevant sectoral emissions budgets, as outlined in Table 9.6. For the Proposed Development, the applicable sectoral emissions budgets include those for Industry Buildings (Residential), Transport, and Waste. The projected emissions for the development are annualised over an assumed 50-year lifespan and then compared to the relevant sector's 2030 carbon budgets. This annualization process facilitates a proper comparison with annual GHG targets.

**Table 9.6 Construction Phase Greenhouse Gas Emissions**

| Stage | GHG Assessment Category | Predicted GHG Emissions ($tCO_2e$) | Relevant Sector for Cabron Budget Comparison | Annualised GHG Emissions as % of Relevant Cabron Budget |
|---|---|---|---|---|
| **Production Stage** | Materials | 6,648 | Industry | 0.003324% |
| **Transportation to site** | Material Transport | 398 | Transport | 0.000133% |
| **Site Operations/ Construction activities** | Clearance and demolition | 1 | Industry | 0.000001% |
| **Site Operations/ Construction activities** | Excavation | 141 | Industry | 0.000071% |
| **Site Operations/ Construction activities** | Construction Worker Travel to Site | 18 | Transport | 0.000006% |
| **Site Operations/Construction activities** | Construction Fuel Use | 547 | Industry | 0.001095% |

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| Stage | GHG Assessment Category | Predicted GHG Emissions ($tCO_2e$) | Relevant Sector for Cabron Budget Comparison | Annualised GHG Emissions as % of Relevant Cabron Budget |
|---|---|---|---|---|
| **Site Operations/ Construction activities** | Construction Waste Disposal | 17 | Waste | 0.000006% |
| **Site Operations/ Construction activities** | Construction Waste Transport | 364 | Transport | 0.000121% |
| **Material replacement & refurbishment** | Maintenance Material | 648 | Industry | 0.000324% |
| **Total** | | 8,783 $tCO_2e$ | | |

Note 1 Project lifespan assumed 50 years for calculation purposes in line with best practice

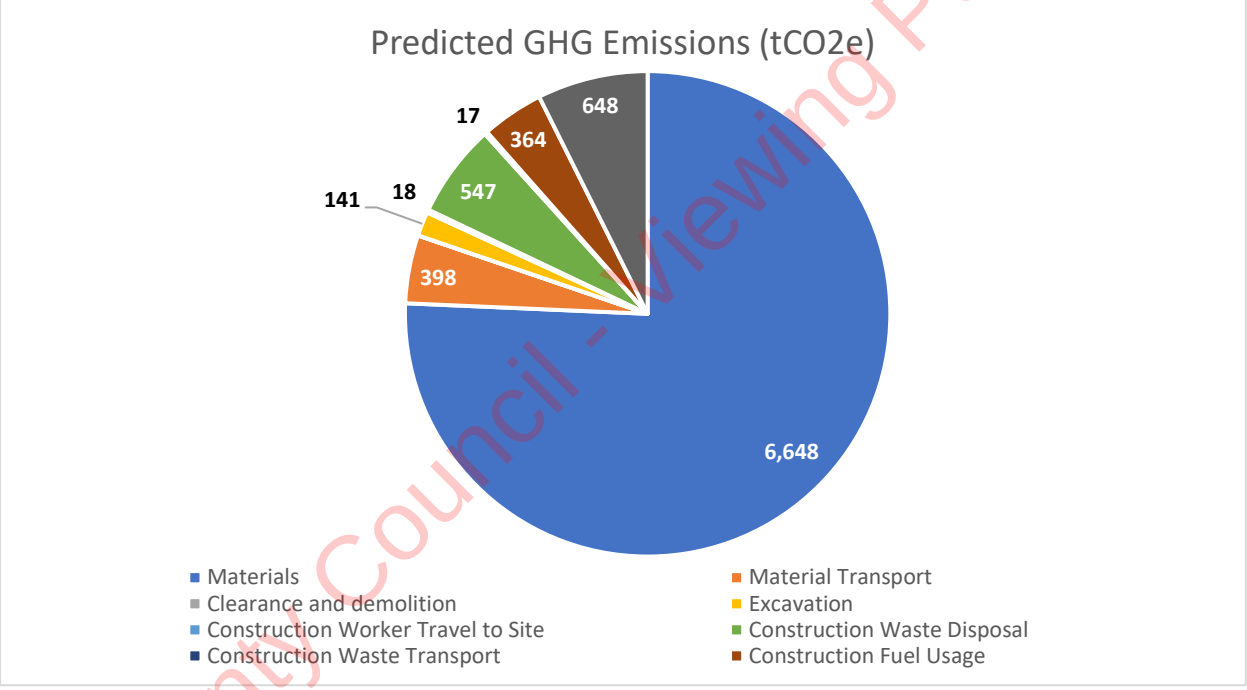



*Figure 9.4: Construction Categories Greenhouse Gas Emissions $tCO_2e$*

The projected GHG emissions (outlined in Table 9.7) can be averaged across the entire lifespan of the Proposed Development to provide annual emissions estimates, facilitating direct comparison with national annual emissions and targets.

Table 9.7 compares these GHG emissions with the 2030 carbon budgets for the transport, industry, and waste sectors, Ireland's total GHG emissions for 2023, and Ireland's EU 2030 target of a 30% reduction in non-ETS sector emissions from 2005 levels (33 Mt CO2e) as specified in Regulation EU 2018/842.

When annualised over the Proposed Development's 50-year lifespan, the estimated total GHG emissions amount to 0.0003% of Ireland's total GHG emissions in 2023 and 0.0005% of

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Ireland's non-ETS 2030 emissions target. Specifically, emissions from transport-related activities account for 0.0029% of the 2030 Transport budget, construction waste emissions represent 0.0176% of the Waste budget, and industry-related emissions comprise 0.0044% of the 2030 Industry budget.

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**Table 9.7 Estimated Construction GHG Emissions relative to Sectoral Budgets and GHG Baseline**

| Target/Sectoral Budget ($tCO_2e$) | | Sector Annualised Proposed Development GHG Emissions are Compared | Annualised Proposed Development GHG Emissions as % of Relevant Target/Budget |
|---|---|---|---|
| **Ireland's 2023 Total GHG Emissions (existing baseline)** | 58,829,000 | Total GHG Emissions | 0.0003% |
| **Non-ETS 2030 Target** | 33,381,312 | Total GHG Emissions | 0.0005% |
| **(Industry Sector) 2030 Sectoral Budget** | 4,000,000 | Total Industry Emissions | 0.0044% |
| **(Transport Sector) 2030 Sectoral Budget** | 6,000,000 | Total Transport Emissions | 0.0029% |
| **(Waste Sector) 2030 Sectoral Budget** | 1,000,000 | Total Waste Emissions | 0.0176% |

#### *9.9.1.1 Effects of Climate Change on the Proposed Construction Phase*

According to the 'LA 114 (2019) – Climate' guidance, which has been successfully implemented in the UK and referenced by the EPA here in Ireland, a qualitative assessment of disruption risk should be reported for the construction phase. The guidance suggests that changes to long-term seasonal averages due to climate change are not anticipated to be significant by the construction year, as predictions are typically cantered around mid-century. However, flooding during construction remains a possibility, and the areas at risk of flooding are detailed in Chapter 7 on Water (Including Hydrology & Flood Risk). Flood risk measures and extreme weather considerations have been integrated into the construction planning process.

The Site-Specific Flood Risk Assessment completed by JBA (2025) confirms the Proposed Development footprint within the subject site as being located wholly within Flood Zone C and is therefore appropriate for residential development. Finished Floor Levels across the site retain a minimum freeboard of at least 150mm surrounding hard surfaces including the road network. Surface water will be managed through the use of underground attenuation tanks swales and controlled discharge.

Mitigation measures are outlined in Chapter 7 Hydrology and Hydrogeology (Including Hydrology & Flood Risk) to manage flood risk impacts during the construction stage.

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### 9.9.2 Operational Phase

#### *9.9.2.1 Operational Effects*

Climate change has the potential to alter weather patterns and increase the frequency of rainfall in future years. As a result of this there is the potential for flooding related impacts on site in future years. However, adequate attenuation and drainage have been provided for to account for increased rainfall in future years as part of the design of this development. Therefore, the effect will be long-term, localised, neutral, and imperceptible.

There is the potential for a number of greenhouse gas emissions to the atmosphere during the operational phase of the development. The main sources of GHG emissions from the operational stage of the development arise from heating, domestic hot water, and lighting. The Proposed Development will introduce sustainable and renewable energy technology to the development. Ongoing maintenance of the Proposed Development materials has been accounted for within Section 9.10.1 above. The following section outlines the effects of operational energy use on GHG emissions.

There is the potential for increased traffic volumes to effect climate, therefore, traffic related CO2 emissions have also been calculated through the use of the TII REM tool. The output is provided in terms of CO2eq for the Opening Year (2028) and Design Year (2043). Both the 'Do Nothing' and 'Do Something' scenarios are quantified in order to determine the degree of change in emissions as a result of the Proposed Development.

The predicted concentrations of CO2 for the Opening Year (2028) and Design Year (2043) are detailed in Table 9.8 below. The change in AADT values is not of the magnitude to require a detailed climate assessment as per the DMRB screening criteria outlined in Section 9.6.4.3 (UK Highways Agency, 2019b). It can therefore be determined that traffic related CO2 emissions during the operational phase are long-term, localised, neutral, and imperceptible.

**Table 9.8:** Predicted concentrations of traffic related CO2 emissions

| Year | Scenario | CO2eq (tonnes/annum) |
|---|---|---|
| 2028 | Do Nothing | 53.92 |
| | Do Something | 73.37 |
| 2043 | Do Nothing | 82.22 |
| | Do Something | 73.81 |
| Increment in 2028 | | +19.45 |
| Increment in 2043 | | -8.41 |

The Proposed Development has been designed to reduce the effects to climate where possible. A number of measures have been incorporated into the design to ensure the operational phase emissions are minimised. These are outlined fully within the Energy, Utilities and Telecommunications Statement prepared by McElligott and are summarised below.

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The Proposed Development will be a Nearly Zero Energy Building (NZEB) development in accordance with the Part L 2021 requirements. Each building will have a Building Energy Rating (BER) that will comply with the Part L requirements. The following measures, or similar will be incorporated into the Proposed Development to achieve a more energy efficient (i.e. less carbon intensive) design. All measures will be reviewed at the detailed design stage and the most appropriate options will be implemented.

- High performance U-values.
- Improved air tightness.
- Improved thermal transmittance and thermal bridging.
- Use of renewable technologies to ensure energy consumption is in line with the Part L 2021 requirements for example, air to water heat pumps is being considered.
- Both internal and external lighting to be energy efficient LED lighting.
- Connected to a centralised district heating. The primary heat input will come from air to water heat pumps and the secondary heat input from backup boilers.
- Installation of local fresh air heat pumps for the generation of HWS. This is the majority energy burden in the apartments as space heating losses have almost been designed out.
- Installation of heat recovery ventilation.
- Incorporation of CHP engines into the district heating scheme. Units would be sized to achieve a balance between heat demand to the apartments and the extent of electricity that can be used efficiently on site by Landlord services and car charging.
- The developer will provide car charging points at the outset for 20% of spaces as per the Development Plan. Each of these enabled spaces will be equipped with one fully functional EV Charging Point, with ducting provided to all car parking spaces across the communal residential parking. Dwellings with in-curtilage car parking will have appropriate infrastructure installed to enable installation at a later stage of a recharging point for EVs, by the home occupier.
- Building materials will be high-quality and long-lasting to reduce the requirement for regular maintenance or replacement which will reduce the embodied carbon footprint of the development.

It is proposed to incorporate bicycle and electric vehicle parking spaces within the Proposed Development to promote the use of sustainable transport. Overall, these measures will aid in reducing the effects to climate during the operational phase of the Proposed Development. Full descriptions of the measures proposed, and their benefits are outlined within the Building Lifecycle Report and traffic and transport assessment submitted with this application.

In Table 9.9, operational GHG emissions have been compared against the carbon budget for the residential and transport sector in 2030, against Ireland's total GHG emissions in 2022 and against Ireland's EU 2030 target of a 30% reduction in non-ETS sector emissions based on 2005 levels (33 Mt CO2e) (set out in Regulation EU 2018/842 of the European Parliament and of the Council).

The estimated total GHG emissions, when annualised over the 50-year Proposed Development lifespan, are equivalent to 0.0003% of Ireland's total GHG emissions in 2023 and 0.0005% of Ireland's non-ETS 2030 emissions target. The total GHG emissions associated with residential-related activities are 0.0029% of the 2030 residential budget and 0.0003% of the transport sectoral budget.

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## 9.9 Estimated Operational GHG Emissions relative to Residential Budget and GHG Baseline

| Target/Sectoral Budget ($tCO_2e$) | | Sector Annualised Proposed Development GHG Emissions are Compared | Annualised Proposed Development GHG Emissions as % of Relevant Target/Budget |
|---|---|---|---|
| **Ireland's 2023 Total GHG Emissions (existing baseline)** | 58,829,000 | Total GHG Emissions | 0.0003% |
| **Non-ETS 2030 Target** | 33,000,000 | Total GHG Emissions | 0.0005% |
| **(Residential Sector) 2030 Sectoral Budget** | 5,753,000 | Total Residential Emissions | 0.0029% |
| **(Transport Sector) 2030 Sectoral Budget** | 6,000,000 | Total Transport Emissions | 0.0003% |

#### *9.9.2.2 GHGA Significance of Effects*

The TII guidance (2022) states that the following two factors should be considered when determining significance:

- The extent to which the trajectory of GHG emissions from the project aligns with Ireland's GHG trajectory to net zero by 2050; and
- The level of mitigation taking place.

The level of mitigation described in Section 9.10 has been taken into account when determining the significance of the Proposed Development's construction and operational GHG emissions. According to the IEMA significance criteria described in Section 9.6.3.4 and Table 9.1, the significance of the GHG emissions during the construction and operational phase is minor adverse.

In accordance with the EPA guidelines (EPA, 2022), the above significance equates to a significance of effect of GHG emissions during the construction and operational phase, which is **direct, long-term, negative, and slight, which is overall not significant.**

### 9.9.3 Climate Change Risk Assessment

#### *9.9.3.1 Construction Phase*

A detailed CCRA of the construction phase has been scoped out, as discussed in Section 9.6.4.5, which states that there are no residual medium or high-risk vulnerabilities to climate change hazards and therefore a detailed CCRA is not required. However, consideration has been given to the Proposed Development's vulnerability to the following climate change hazards with best practice mitigation measures proposed in Section 9.11:

- Flood risk due to increased precipitation, and intense periods of rainfall. This includes fluvial and pluvial flooding.

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- Increased temperatures potentially causing drought, wildfires, and prolonged periods of hot weather.
- Reduced temperatures resulting in ice or snow.
- Geotechnical impacts; and
- Major Storm Damage – including wind damage.

#### *9.9.3.2 Operational Phase*

To assess the vulnerability of the Proposed Development to climate change, it is essential to first evaluate the development's sensitivity and exposure to various climate hazards. The following climate hazards have been analysed in relation to the Proposed Development: flooding (coastal, pluvial, and fluvial), extreme heat, extreme cold, wildfire, drought, extreme wind, lightning, hail, landslides, and fog.

The sensitivity of the Proposed Development to these climate hazards is evaluated independently of its location. Table 9.10 provides a sensitivity assessment of the Proposed Development, rated on a scale from high (3) to medium (2) to low (1). After establishing sensitivity, the exposure of the Proposed Development to each climate hazard is determined, reflecting the likelihood of these hazards occurring at the project site, also rated on a scale of high (3), medium (2), and low (1). The overall vulnerability of the Proposed Development to each climate hazard is then calculated by multiplying sensitivity and exposure, as outlined in Table 9.10.

**Table 9.10 Climate Change Vulnerability Assessment/Climate Screening**

| Climate Hazard | Sensitivity | Exposure | Vulnerability |
|---|---|---|---|
| Flooding (Coastal, Pluvial, Fluvial) | 1 (Low) | 1 (Low) | 1 (Low) |
| Extreme Heat | 1 (Low) | 1 (Low) | 1 (Low) |
| Extreme Cold | 1 (Low) | 1 (Low) | 1 (Low) |
| Wildfire | 1 (Low) | 1 (Low) | 1 (Low) |
| Drought | 1 (Low) | 1 (Low) | 1 (Low) |
| Extreme Wind | 1 (Low) | 1 (Low) | 1 (Low) |
| Lightning & Hail | 1 (Low) | 1 (Low) | 1 (Low) |
| Landslides | 1 (Low) | 1 (Low) | 1 (Low) |
| Fog | 1 (Low) | 1 (Low) | 1 (Low) |

The sensitivity and exposure of the area were assessed using various online tools such as Met Éireann's TRANSLATE tools, Climate Ireland – Climate Change Projection Maps, and DNV's Climatics multi-climate hazard analysis tool in addition to the project team's subject matter expertise. The analysis concluded that the Proposed Development has no significant vulnerabilities to the identified climate hazards, as outlined below. All identified vulnerabilities are classified as low. As a result, there are no residual medium or high-risk vulnerabilities related to climate change hazards, making a detailed Climate Change Risk Assessment (CCRA) unnecessary.

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The Site-Specific Flood Risk Assessment (SSFRA) conducted by JBA (2025) indicates that the site is located wholly within Flood Zone C. The site is currently a greenfield site located on the western fringe of Drogheda, Co. Meath. It is situated south of the River Boyne between the M1 Motorway and Rathmullan Road. No historic flooding has been identified within the site boundary. A portion of the site is currently incorrectly classified as Flood Zone A/B, due to the outdated catchment conditions represented within the Eastern CFRAMs flood modelling and mapping. This CFRAM study does not reflect the interception of the former Sheephouse Stream and incorporation of its flows into the M1 motorway surface water drainage network. From reviewing available sources of flooding, including the flood extent and depth maps produced as part of the Eastern CFRAM, the Proposed Development is at low risk of flooding and should be classified as Flood Zone C. Finished Floor Levels across the site retain a minimum freeboard of at least 150mm surrounding hard surfaces including the road network. Surface water will be managed through the use of underground attenuation tanks swales and controlled discharge.

Due to the predicted increase in the frequency and intensity of extreme rainfall events, it is prudent that site specific drainage and management measures aimed at mitigating the effects of pluvial flooding are incorporated into the development design. The Proposed Development includes the construction of a surface water network which consists of Sustainable Urban Drainage Systems (SuDS) measures which will minimise the effect to the receiving environment and manage the pluvial flood risk at the site. The proposed surface water network has been designed with an allowance for climate change as per the MCC CDP 2021-2027 and in accordance with Greater Dublin Drainage Strategy (GDSDS). The design accommodates flows in peak rainfall events, and the drainage system has sufficient capacity to accommodate a 1 in 100 Year plus 20% Climate Change event below ground without flooding any of the paved surfaces.

The correct operation and maintenance of the drainage system is necessary to reduce the risk of human or mechanical error causing pluvial flood risk from blockage. The CFRAM mapping available for the site indicates that the pluvial flood risk to the development is low.

Groundwater flooding occurs when the water table rises above the land surface, this means the natural underground drainage system is incapable of sufficiently draining itself, resulting in the emergence of groundwater at the surface. It generally requires sustained rainfall over relatively longer duration than other forms of flooding, its location is discontinuous, and they can last for weeks or months. The SSFRA has determined that the Proposed Development is not at risk of groundwater flooding.

Regarding wildfires, the Think Hazard! tool developed by the Global Facility for Disaster Reduction and Recovery classifies the wildfire hazard in the area as low. This classification suggests there is a 4% to 10% chance of weather conditions that could support a problematic wildfire in the project area, potentially causing disruptions and posing a low but real risk to life and property each year. Although future climate models predict an increase in conditions favourable to wildfires—such as higher temperatures and extended dry periods—the project's suburban location significantly reduces the wildfire risk. Therefore, the Proposed Development is considered to have a low vulnerability to wildfires.

ThinkHazard! uses the best available hazard data as the basis of its classification of hazard level. One method uses probabilistic data, which specifies the intensity and frequency of

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events in each region – e.g., earthquake data show the likelihood of a particular amount of ground shaking occurring at different locations. ThinkHazard! also uses data that says, for example, 'the climate and ground conditions in this region suggest the region has a certain susceptibility to landslides.

The classification of hazard level in ThinkHazard! is based on the likelihood of each region experiencing a hazard with enough intensity (e.g., intensity of ground shaking) to cause damage. A higher hazard classification in ThinkHazard! indicates that there is greater potential for damage or disruption to activities or a project in that region, according to the underlying hazard data. For any region selected by a user, ThinkHazard! shows the maximum hazard level within that region.

According to the Landslide Susceptibility Map developed by Geological Survey Ireland (GSI), the Proposed Development Site ranges from Low to Moderately Low in terms of landslide susceptibility.

Extreme temperatures, whether extreme heat or cold, have the potential to affect building materials and associated infrastructure. During the detailed design stage, high-quality, durable, and resilient materials will be selected to withstand future temperature fluctuations due to climate change. Consequently, the Proposed Development is assessed to have at most, low vulnerabilities to these climate hazards, and a detailed risk assessment is not necessary.

There is no additional vulnerability with respect to all climate hazards when design mitigation has been put in place in order to alleviate this known vulnerability to future climate change risk.

#### *9.9.3.3 CCRA Significance of Effects*

With the implementation of design mitigation measures, the Proposed Development faces no substantial risks from climate change. As outlined in the EPA Guidelines (EPA, 2022), the effects of climate change on the development are considered **direct, long-term, negative**, and **imperceptible**, and are therefore **not deemed significant** in terms of Environmental Impact Assessment (EIA).

### 9.9.4 Potential Cumulative Effects

Regarding the requirement for a cumulative assessment, TII PE-ENV-01104 (2022) indicates that "since the GHG assessment pertains to global climate and the effects on the receptor from a project are not geographically constrained, the typical approach for cumulative assessment in EIA is not deemed applicable." However, by evaluating the GHG impact of a project in relation to its alignment with Ireland's trajectory towards net zero and sectoral carbon budgets, this assessment will demonstrate the project's potential influence on Ireland's ability to meet its national carbon reduction targets. Consequently, the assessment approach is inherently cumulative.

The following potential cumulative effects related to climate have been considered within this Environmental Impact Assessment Chapter. Cumulative effects result from the combined effects of the Proposed Development alongside other existing or planned developments in the area. A review of other off-site developments was completed as part of this assessment.

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Chapter 2 of this EIAR details the existing, proposed and granted planning permissions on record in the area, a review of these planning permissions has been completed as part of this assessment, without repeating them here.

These effects can intensify climate-related risks and environmental pressures, leading to more pronounced and widespread consequences. IEMA emphasises the importance of understanding these interactions to develop effective mitigation and adaptation strategies that align with broader sustainability objectives.

**Greenhouse Gas (GHG) Emissions**

As per IEMA's guidance on assessing climate change within EIAs (2022), the cumulative effect of GHG emissions from the Proposed Development, in conjunction with other developments, must be carefully evaluated. The aggregation of emissions across multiple projects can significantly contribute to global climate change, exacerbating the effects of rising temperatures, more frequent extreme weather events, and changes in precipitation patterns. To address this, we have identified robust mitigation measures aimed at reducing the development's carbon footprint, ensuring alignment with regional and national climate targets, and adhering to the principles of the EU Taxonomy and Near Zero Energy Building (NZEB) standards. Nearby emissions sources include the M1 motorway and existing residential developments to the east of the site, comprising two- storey terrace houses and three-storey duplexes.

**Water Resources and Flooding**

IEMA (2022) stresses the importance of considering cumulative impacts on water resources, particularly with respect to flood risks and water availability. The combined effect of increased rainfall due to climate change and additional impermeable surfaces from multiple developments can overwhelm existing drainage infrastructure, leading to a higher frequency and severity of flooding events. This underscores the need for integrated water management strategies that enhance the resilience of water systems and incorporate climate adaptation measures, such as sustainable urban drainage systems (SUDS), as recommended within the site-specific flood risk assessment.

**Biodiversity and Habitat Loss**

Cumulative effects on biodiversity are another significant concern. IEMA guidance (2022) highlights that climate change, coupled with habitat loss from multiple developments, can lead to more severe impacts on ecosystems and species. The fragmentation of habitats and disruption of ecological networks can accelerate species decline and reduce ecosystem resilience. To mitigate these impacts, the Applicant has incorporated strategies for habitat conservation, restoration, and connectivity, they will ensure that biodiversity is protected and enhanced in the face of cumulative pressures.

**Air Quality and Human Health**

IEMA also advises considering the cumulative impacts on air quality and human health. Increased emissions from multiple developments can lead to higher concentrations of pollutants, exacerbating climate change-related health risks, such as respiratory conditions

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and heat-related illnesses. The EIA should ensure that air quality management plans are in place and that mitigation measures are designed to minimise emissions, particularly in urban areas where cumulative impacts are more likely to be significant.

**Soil Degradation and Erosion**

Cumulative impacts on soil degradation and erosion are another area of concern highlighted by IEMA. The combined effects of climate change-induced extreme weather events and land disturbance from construction activities can lead to accelerated soil erosion, reduced fertility, and increased sedimentation in water bodies. Sustainable land management practices, including erosion control measures and soil conservation techniques, should be integrated into the development to mitigate these cumulative impacts.

**Infrastructure and Energy Demand**

Finally, IEMA's guidance emphasises the importance of considering the cumulative impacts on infrastructure and energy demand. As multiple developments increase the demand for energy, there is a risk of overloading local grids and increasing reliance on fossil fuels, which could exacerbate GHG emissions and climate change. The Proposed Development does promote energy efficiency, the use of renewable energy sources, and the integration of smart grid technologies to ensure that infrastructure can accommodate future energy needs without compromising climate goals.

### 9.9.5 Mitigation and Monitoring

In accordance with IEMA guidance (2022), addressing cumulative impacts requires a comprehensive approach that includes effective mitigation strategies and ongoing monitoring. These strategies should focus on enhancing energy efficiency, reducing GHG emissions, protecting natural habitats, managing water resources sustainably, and ensuring resilient infrastructure. Continuous monitoring and adaptive management will be essential to identify cumulative impacts early and to adjust mitigation measures as necessary to minimise long-term environmental and climate-related risks.

By considering cumulative impacts within the climate chapter of the EIA, the Applicant will ensure a thorough and responsible assessment that aligns with IEMA's best practices, contributing to the sustainability and resilience of both the Proposed Development and the broader environment.

### 9.9.6 "Do Nothing" Effects

Under the Do-Nothing Scenario no construction works will take place and the previously identified impacts of carbon emissions from equipment, machinery and development operation will not occur. Therefore, this scenario can be considered neutral in terms of climate.

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## 9.10 Avoidance, Remedial & Mitigation Measures

### 9.10.1 Construction Phase

Embodied carbon of materials and construction activities is the primary source of climate impacts during the construction phase. The Construction Waste Management Plan, (January 2025), prepared by Waterman Moylan which accompanies this planning application details a number of measures to reduce the embodied carbon of the demolition works. Further pre-construction carbon Avoidance, Remedial & Mitigation Measures include:

**Design for Performance**

- Request a Design for Performance approach from design teams and contractors.
- Include contractual targets for whole life carbon with a focus on Net Zero and nature-positive goals where possible.

**Circularity in Design**

- Require design teams to develop a circularity concept for projects, focusing on adaptability, disassembly, and reuse.
- Set a target for a percentage of reused and recycled materials in designs.

**Building Lifecycle Report**

- Ensure the building lifecycle report is regularly reviewed and updated in line with current policy and best practice for sustainable construction.

**Carbon Literacy**

- Develop carbon literacy within design and construction teams by providing training on carbon literacy, ESG reporting, and disclosure.
- Incorporate sustainability and carbon considerations into site team talks, construction targets, and reporting.
- Include training clauses for contractors and sub-contractors to upskill their teams in low-energy construction techniques.

**Building Renovation Passports (BRPs)**

- Request Building Renovation Passports for this asset as part of the roadmap to decarbonise each asset.
-

**Cement Reduction**

- Specify the minimum amount of cement needed in concrete and substitute where feasible to reduce cement usage.

**Sustainable Procurement**

- Review sustainable procurement and material choices during detailed design to identify and implement lower embodied carbon options.

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- Request Environmental Product Declarations (EPDs) and prefer products with EPDs where possible within procurement restrictions.
- Drive demand for EPDs by increasing the percentage of products used in the project with EPDs.

**European Framework for Sustainable Buildings**

- Commit to using key indicators from the European Framework for sustainable buildings, Level(s), with support from the IGBC.
- Focus on indicators such as Life Cycle Assessment (LCA), Life Cycle Cost (LCC), Indoor Air Quality (IAQ), and Circularity.

**Energy and Carbon Performance Reporting**

- Plan to disclose the operational energy and carbon performance of the project in your annual reporting.

**Post-Occupancy Evaluation**

- Allow for post-occupancy evaluation of completed developments to ensure feedback is passed to the design team.

**Demolition and Construction Waste Management**

- Create a demolition and construction programme allowing sufficient time to determine reuse and recycling opportunities for demolition waste.
- Appoint a competent demolition contractor to undertake a pre-demolition audit detailing resource recovery best practice and identifying materials for reuse and recycling.
- Reuse materials on site in the new build areas where possible.

**EU Taxonomy Compliance**

- Commit to complying with EU taxonomy requirements on the circular economy, specifically reuse, recycling, and material recovery of demolition and construction waste.
- Review and ensure compliance with the EU Taxonomy Regulation (EU) 2020/852 regarding circular economy practices for demolition and construction waste.

**Local Material Sourcing**

- Source materials locally where possible to reduce transport-related CO2 emissions.

**Building Certifications**

- Aim for building certifications such as HPI (Home Performance Index), LEED (Leadership in Energy and Environmental Design), or equivalent, to ensure sustainable and high-performance standards are met throughout the project.

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Regarding the development's resilience to climate change, the Contractor will be required to mitigate the effects of extreme weather, such as heavy rainfall, flooding, windstorms, and temperature fluctuations, through site risk assessments and method statements. Additionally, certified datasheets for construction materials will outline their operational temperature limits, ensuring that temperature-sensitive materials perform adequately. The Contractor will also address risks associated with fog, lightning, and hail through appropriate risk assessments and mitigation plans.

During the construction phase the following best practice measures shall be implemented on site to prevent significant GHG emissions and reduce impacts to climate:

- **Energy-Efficient Equipment:** Use energy-efficient machinery and equipment on-site. Regular maintenance and proper operation can also help reduce fuel consumption and emissions.
- **Renewable Energy:** Incorporate renewable energy sources, such as solar panels, to power construction activities. This can significantly reduce reliance on fossil fuels
- **Reduce Idling**: Prevention of on-site or delivery vehicles from leaving engines idling, even over short periods.
- **Sustainability Awareness**: Ensure that sustainability and carbon specifically is incorporated into site team talks, construction, and reporting targets. Integrate training clauses for contractors and sub-contractors to upskill their onsite personnel including sub-contractors in low energy construction skills. Appoint sustainability champions to ensure that the project continues to perform in a sustainable manner.
- **Sustainable Transportation**: Encourage carpooling, use of public transportation, or electric vehicles for workers commuting to the site.
- **Monitoring and Reporting:** Regularly monitor and report GHG emissions from the construction site. This helps in identifying areas for improvement and ensuring compliance with environmental standards. Sustainability spot checks should be added to ongoing site inspections and feedback shared with all onsite to ensure measures are being adopted.
- **Maintenance**: Ensure all plant and machinery are well maintained and inspected regularly.
- **Waste Management:** Implement a robust waste management plan to reduce, reuse, and recycle construction waste. Proper waste management can significantly cut down on emissions. Minimising waste of materials due to poor timing or over ordering on site will aid to minimise the embodied carbon footprint of the site. The waste management hierarchy will be applied to all waste material generated.
- **Sustainable Procurement:** Sourcing low carbon materials locally where possible to reduce transport related CO2 emissions

### 9.10.2 Operational Phase

A number of measures have been incorporated into the design of the development in order to mitigate against the impacts of future climate change. For example, adequate attenuation and drainage have been incorporated into the design of the development to avoid potential flooding impacts as a result of increased rainfall events in future years. These measures have been considered when assessing the vulnerability of the Proposed Development to climate change (see Section 9.7.3).

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The Proposed Development has been designed to reduce the impact on climate as a result of energy usage during operation. The Energy, Utilities and Telecommunications Statement prepared by McElligott and Building Lifecycle report prepared by Aramark and submitted under separate cover with this planning application details a number of incorporated design mitigation measures that have been incorporated into the design of the development to reduce the impact on climate wherever possible.

Such measures included in the Proposed Development to reduce the effects to climate from energy usage are:

- The development will be in compliance with the requirements of the Near Zero Energy Building (NZEB) Standards.
- A renewable energy rating (RER) of 20% will be achieved to comply with Part L (2021) of the NZEB regulations.
- A Building Energy Rating (BER) of A2/A3 is being targeted.
- Improved building thermal transmittance (U-Values), air permeability and thermal bridging.
- Use of air source heat pumps.
- Sustainability information provided to building occupants.
- Smart building technologies.

In addition, electric vehicle and bicycle parking will be provided within the development which will promote the use of more sustainable modes of transport and reduce potential transport emissions. Full descriptions of the measures proposed, and their benefits are outlined within the Building Lifecycle Report submitted with this application.

## 9.11 Residual Effects

The Proposed Development will result in some effects to climate through the release of GHGs. IEMA (2022) state that the crux of assessing significance is “not whether a project emits GHG emissions, nor even the magnitude of GHG emissions alone, but whether it contributes to reducing GHG emissions relative to a comparable baseline consistent with a trajectory towards net zero by 2050”. The Proposed Development has proposed some best practice mitigation measures and is committing to reducing climate effects where feasible, the development will comply with the do-minimum standards set through regulation (NZEB and Part L 2021). As per the assessment criteria in Table 9.6.4.4 the impact of the Proposed Development in relation to GHG emissions is considered **long-term, minor adverse and not significant.**

In relation to climate change vulnerability, it has been assessed that there are no significant risks to the Proposed Development as a result of climate change.

## 9.12 Risk of Major Accidents or Disasters

As detailed in Section 9.7 climate change could shift weather patterns and lead to more frequent rainfall in the coming years. Nonetheless, a thorough review of the potential flood risk at the site has been conducted, and sufficient measures for attenuation and drainage have been incorporated to address increased rainfall. The Proposed Development has been evaluated as having a low susceptibility to climate change-related hazards, with no major risks

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identified. Consequently, the effects are considered direct, long-term, negative, and imperceptible, and are therefore not deemed significant in terms of the Environmental Impact Assessment (EIA).

## 9.13 Worst Case Scenario

Worst case estimates have been used as part of this assessment. As a result, Section 9.11 details the worst-case effects for the Proposed Development. OBJ

## 9.14 Monitoring

### 9.14.1 Construction Phase

The following monitoring strategies will be adopted to ensure compliance with the environmental objectives outlined in this EIA. These strategies are essential for effectively managing the environmental effects associated with the demolition and construction phases, with a particular focus on resource recovery, waste management, and the reduction of greenhouse gas (GHG) emissions.

**Monitoring of Demolition Waste Reuse and Recycling**

To optimise the reuse and recycling of demolition materials, the following measures will be implemented:

- Material Reuse Tracking System: A digital tracking system could be established to monitor materials identified for reuse or recycling. This system will log details such as quantities, conditions, and intended applications within the new construction areas. It is important that this system is regularly updated to reflect ongoing recovery efforts.
- Weekly Progress Reports: It is suggested that the demolition contractor be required to submit weekly progress reports. These reports should provide detailed metrics on the volumes of materials recovered, reused, and recycled, alongside any challenges encountered. This approach will allow for the early identification of issues and timely adjustments to the recovery plan.
- Regular On-Site Inspections: regular inspections will be conducted to verify that materials earmarked for reuse are being properly stored and handled. These inspections should ensure that materials remain in suitable condition for their intended use in the new build areas.

**Competency and Performance of Demolition Contractor**

To ensure that the demolition process aligns with the project's environmental goals, following monitoring measures will be applied:

- Verification of Pre-Demolition Audit: The pre-demolition audit conducted by the appointed contractor should be thoroughly reviewed to confirm that all materials and components suitable for reuse or recycling have been accurately identified. This review will ensure that the audit reflects best practice in resource recovery.
- Periodic Contractor Performance Reviews: It is suggested conducting periodic performance reviews of the demolition contractor. These reviews should focus on their adherence to the resource recovery plan, the accuracy of material identification, and

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their overall compliance with project timelines without compromising environmental standards.

**Compliance with EU Taxonomy for Circular Economy**

Given the project's commitment to meeting EU taxonomy requirements, the following is recommended:

- Comprehensive Documentation and Reporting: It is essential to maintain detailed records that document compliance with the circular economy principles outlined in the EU taxonomy. This documentation should include logs of all recycled materials, percentages of materials reused on-site, and detailed descriptions of how circular economy practices are being implemented.
- Independent Third-Party Audits: It is recommended engaging an independent auditor to periodically assess the project's compliance with the EU taxonomy. The audit should verify the accuracy of reported data and ensure that the circular economy requirements are fully adhered to throughout the project.

**Monitoring of GHG Emissions Reduction Measures**

To mitigate the project's effects on climate change, the following monitoring activities are proposed:

- Appoint sustainability champions to ensure that the project continues to perform in a sustainable manner including monitoring and reporting of performance on site.
- Idle Time Monitoring for Vehicles and Machinery: It is suggested installing GPS or telematics systems on all vehicles and machinery used on-site to monitor engine idling times. Automatic alerts should be set up to notify site managers when idling exceeds a specified threshold, enabling prompt corrective action to reduce unnecessary emissions.
- Maintenance Logs for Plant and Machinery: Implementing a digital maintenance log system to track the inspection and maintenance of all on-site equipment is recommended. This system should record inspection dates, maintenance activities, and any identified issues, ensuring that all machinery operates efficiently and with minimal emissions.
- Material Waste Minimisation Tracking: A monitoring system should be developed to track material orders and usage. This system should identify trends in over-ordering or inefficient material use, enabling the project team to take corrective actions that will help minimise the embodied carbon footprint of the site.

**Application of Waste Hierarchy**

To optimise waste management on-site, we recommend the following monitoring protocols:

- Waste Segregation Audits: Regular audits should be conducted to ensure that waste is being properly segregated according to the waste hierarchy (reduce, reuse, recycle). These audits will help identify opportunities for improving waste management practices and reducing overall waste generation.
- Monthly Waste Management Reports: We suggest generating monthly reports detailing the volume of waste reduced, reused, and recycled. These reports should be

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compared against predefined targets to assess the effectiveness of the waste management strategies and to identify areas for improvement.

**Local Sourcing of Materials**

To reduce transport-related emissions and support local suppliers, we recommend the following:

- Supplier Distance Monitoring: A database of suppliers should be developed, documenting the distance of each supplier from the construction site. This database should be used to monitor and minimise the carbon footprint associated with material transportation, prioritising local suppliers wherever possible.
- Transport-Related Carbon Footprint Analysis: Conducting a carbon footprint analysis for the transportation of all materials to the site is recommended. This analysis should inform the selection of suppliers, with a preference for those within a closer radius to reduce CO2 emissions.

These monitoring recommendations are designed to ensure that the project adheres to its environmental commitments, particularly in the areas of resource recovery, waste management, and greenhouse gas emissions reduction. By implementing these strategies, the project will not only comply with regulatory requirements but also contribute to broader environmental sustainability goals. Regular reporting, on-site inspections, and third-party audits will be critical to maintaining compliance and achieving the desired environmental outcomes.

### 9.14.2 Operational Phase

An Environmental Management Plan that incorporates adaptive management principle will be developed and implemented for the operational lifecycle stage of the proposed development.

The Applicant will ensure climate change resilience plans are robust, will continue monitoring trends in weather events; and continue to review resilience measures related to interdependencies.

The following monitoring strategies will be applied to ensure that the Proposed Development meets its environmental objectives. These strategies focus on mitigating the effects of climate change, enhancing energy efficiency, and promoting sustainable transport, all of which are aligned with best practices outlined in IEMA guidelines.

**Monitoring of Climate Change Mitigation Measures**

- **Attenuation and Drainage Systems Monitoring**: Consistent with IEMA's guidance on climate resilience, regular inspections should be undertaken to verify the functionality of the attenuation and drainage systems. These inspections should be conducted during construction, after significant rainfall events, and periodically thereafter to ensure long-term effectiveness in preventing flooding.
- **Climate Vulnerability Assessment Review**: In accordance with IEMA's recommendation to periodically reassess climate risks, we suggest reviewing the climate vulnerability assessment (as detailed in Section 9.7.3) at regular intervals. This review should incorporate the latest climate projections to ensure the mitigation measures remain adequate and effective.

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**Monitoring of Energy Efficiency and Climate Effects Reduction**

To minimise the effects of the development on climate through energy use during operation, the following monitoring activities are recommended:

- **NZEB Compliance Verification**: Continuous monitoring during the construction phase should ensure that the development complies with the Near Zero Energy Building (NZEB) Standards. This includes verifying that all building components and systems meet the NZEB criteria.
- **EU Taxonomy Alignment Monitoring**: Ensure that the development achieves energy performance that is at least 10% lower than the NZEB requirements. Regular energy performance assessments should be conducted to confirm alignment with the EU Taxonomy for sustainable development.
- **Renewable Energy Ratio (RER) Compliance**: Monitor the implementation of renewable energy systems, such as solar panels and air source heat pumps, to ensure that the development achieves a Renewable Energy Ratio (RER) of 20%, in line with Part L (2021) of the NZEB regulations. Post-installation, periodic checks should be performed to verify ongoing compliance.
- **Building Energy Rating (BER) Target Achievement**: Regular energy audits should be carried out to monitor the building's energy performance, ensuring that the targeted Building Energy Rating (BER) of A2/A3 is achieved. This includes verifying the efficiency of insulation, windows, HVAC systems, and other energy-related components.
- **Thermal Performance Monitoring**: Continuous monitoring during construction should ensure that the building achieves the improved thermal transmittance (U-Values), air permeability, and thermal bridging standards specified in the design. Post-construction thermal imaging surveys and air tightness tests should be conducted to confirm that these standards have been met.

**Monitoring of Renewable Energy Systems**

To ensure the successful implementation and operation of renewable energy systems, the following monitoring measures are recommended:

- **Air Source Heat Pump Performance**: Regular inspections and maintenance checks should be conducted on the air source heat pumps to ensure they are operating efficiently and contributing effectively to the building's energy needs. Performance metrics such as Coefficient of Performance (COP) and Seasonal Performance Factor (SPF) should be tracked and compared against the expected values.
- **Occupant Sustainability Information**: Consistent with IEMA's emphasis on stakeholder engagement, it is important to ensure that all building occupants receive comprehensive sustainability information. This should include guidance on energy conservation practices and how to use renewable energy systems effectively. Feedback mechanisms, such as surveys, should be used to assess the effects of this information on occupant behaviour.

**Monitoring of Sustainable Transport Initiatives**

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To promote sustainable transport and reduce transport-related emissions, we recommend the following monitoring strategies:

- **Electric Vehicle (EV) and Bicycle Parking Usage**: Regular monitoring should be carried out to assess the usage of electric vehicle charging stations and bicycle parking facilities within the development. This will help gauge the effectiveness of these measures in promoting sustainable transport modes. Usage data can inform whether additional facilities or adjustments are needed.
- **Transport Emissions Impact Assessment**: Periodic assessments should be conducted to evaluate the impact of the provided sustainable transport facilities on reducing overall transport emissions. This could include monitoring the uptake of electric vehicles by residents and the corresponding reduction in greenhouse gas emissions.

These monitoring recommendations are designed to ensure that the development's climate change mitigation measures, energy efficiency initiatives, and sustainable transport provisions are effectively implemented and maintained throughout the lifecycle of the project. By adhering to these strategies, the development will not only comply with relevant regulatory requirements but also contribute to broader environmental sustainability goals. Regular inspections, energy performance assessments, and occupant engagement will be crucial to achieving the desired environmental outcomes.

## 9.15 Interactions

Climate interactions with various environmental topics are extensive and significant, highlighting the broad effects of climate factors across different aspects of the environment. One of the most critical interactions is between climate and greenhouse gas (GHG) emissions. The Proposed Development's carbon footprint, which includes emissions from construction activities, energy use, and transportation, plays a role in influencing climate change. Effective management and reduction of these emissions are crucial to mitigate the project's contribution to global warming and to comply with regulatory requirements and sustainability targets.

Interactions between climate and water resources are also notable. Climate variability, such as increased rainfall or prolonged droughts, can affect water availability, quality, and management practices. This includes effects on stormwater runoff, flood risk, and water supply. The development will incorporate effective water management strategies to address these potential issues and ensure resilience to changing climate conditions.

The relationship between climate and biodiversity is significant as well. Changes in temperature and precipitation patterns can alter habitat conditions, disrupt species distributions, and affect ecological balances. These shifts may impact local flora and fauna, necessitating careful consideration of conservation measures to protect biodiversity within and around the development area.

Soil interactions with climate are critical, with changes in climate affecting soil moisture, erosion rates, and land productivity. Increased rainfall may lead to soil erosion, while extended dry periods can degrade soil quality. Addressing these interactions is essential for maintaining soil health and implementing sustainable land use practices.

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Human health and well-being are closely linked to climate factors, with climate change potentially exacerbating health issues such as heat stress, respiratory conditions, and vector-borne diseases. The development's impact on local climate conditions and its potential influence on public health must be carefully assessed to prevent adverse health outcomes.

Cultural heritage sites are also at risk due to climate change, with increased weathering, flooding, and temperature fluctuations potentially accelerating their deterioration. Protecting these valuable resources requires assessing the potential impacts of climate change and implementing appropriate conservation measures. Further detail can be found in the Archaeological Impact Assessment regarding the site-specific monuments.

In summary, the Proposed Development's interactions with the climate encompass a range of factors including GHG emissions, water resources, biodiversity, soil, human health, and cultural heritage. Effective mitigation strategies and robust monitoring will be essential to address these interactions, minimise adverse effects, and ensure the development's resilience to climate change.

## 9.16 Difficulties Encountered When Compiling

Overall, there were no major difficulties encountered when compiling this assessment. Slight difficulties were encountered during the quantification of materials at the design stage in order to assess the embodied construction carbon as detailed in section 9.6.6.

## 9.17 Conclusion

The assessment of the potential effects resulting from the Proposed Development on climate change in this chapter has identified the potential sources of greenhouse gas emissions arising from the Proposed Development and its vulnerability to climate change.

Following all mitigation measures including design embedded and prescribed measures, adequate implementation of construction phase mitigation, and adherence to operational best practice no significant effects to the climate will arise from the Proposed Development during either the construction or operational phases.

The Assessment concludes:

- The proposed developments GHG impacts are mitigated through "good practice" measures.
- The proposed development has complied with existing and emerging policy requirements; The proposed development is consistent with Ireland's trajectory towards net zero.

Additionally, the operational and maintenance plan for the Proposed Development and the prescribed energy strategy will provide enhanced energy efficiency over the long term.

## 9.18 References

Building Lifecycle Report, (June 2025) Aramark.

Energy, Utilities and Telecommunications Statement, (May 2025) McElligott.

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Operational Waste Management Plan, (June 2025), DNV.

Construction Waste Management Plan, (June 2025), Waterman Moylan.

Construction Environmental Management Plan, (June 2025), Waterman Moylan.

Resource Waste Management Plan, (June 2025), DNV.

Climate Change Impact Assessment, (June 2025), DNV.

Site Specific Flood Risk Assessment, (June 2025), JBA.

BSI (2016) Publicly Available Specification (PAS) 2080:2016 on Carbon Management in Infrastructure

Civil Engineering Standard Method of Measurement (CESSM) (2013) Carbon and Price Book database.

Department of Communications, Climate Action and Environment (2018) National adaptation framework: Planning for a climate resilient Ireland.

Department of the Taoiseach (2022) Carbon Budgets Available at https://www.gov.ie/en/publication/9af1b-carbon-budgets/

Environmental Protection Agency (2025), Greenhouse Gas Emissions Inventory-Latest emissions data [Online] Available at https://www.epa.ie/our-services/monitoring--assessment/climate-change/ghg/latest-emissions-data/

Environmental Protection Agency (2015) Advice Notes for Preparing Environmental Impact Statements – Draft

Environmental Protection Agency (EPA) (2020a) Research 339: High-resolution Climate Projections for Ireland – A Multi-model Ensemble Approach.

Environmental Protection Agency (2024b) State of the Irish Environment Report (chapter 4: climate change)

Environmental Protection Agency (EPA) (2021a) What impact will climate change have for Ireland? [Online] Available at https://www.epa.ie/environment-and-you/climatechange/what-impact-will-climate-change-have-for-ireland/

Environmental Protection Agency (EPA) (2023) What is Ireland doing? [Online] Available at https://www.epa.ie/environment-and-you/climate-change/what-is-ireland-doing/

Environmental Protection Agency (EPA) (2021b) Critical Infrastructure Vulnerability to Climate Change Report no. 369

Environmental Protection Agency (2022a) Guidelines on the Information to be Contained in Environmental Impact Assessment Reports

Environmental Protection Agency (EPA) (2022b) Ireland's National Inventory Report 2021 - Greenhouse Gas Emissions 1990 – 2020

Environmental Protection Agency (2023) EPA website Available at: http://www.epa.ie/whatwedo/monitoring/air/

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Meath County Council - Viewing Purposes Only!

European Commission (2013) Guidance on Integrating Climate Change and Biodiversity into Environmental Impact Assessment

European Commission (2017) Environmental Impact Assessment of Projects: Guidance on the preparation of the Environmental Impact Assessment Report

European Commission (2021a) Technical guidance on the climate proofing of infrastructure in the period 2021-2027.

European Commission (2021b) Forging a climate-resilient Europe - the new EU Strategy on Adaptation to Climate Change.

Government of Ireland (2015) Climate Action and Low Carbon Development Act

Government of Ireland (2019) Climate Action Plan 2019

Government of Ireland (2020) Draft General Scheme of the Climate Action (Amendment) Bill 2019

Government of Ireland (2021a) Climate Action Plan 2021

Government of Ireland (2021b) Climate Action and Low Carbon Development (Amendment) Act 2021 (No. 32 of 2021)

Government of Ireland (2025) Climate Action Plan 2025

Government of Ireland (2022) Climate Action Plan 2023

The Housing Agency (2025), Embodied Carbon and the Climate Impact of our Housing, Philip Comerford.

Institute of Environmental Management & Assessment (IEMA) (2017) Assessing Greenhouse Gas Emissions and Evaluating their Significance

Institute of Environmental Management & Assessment (IEMA). (2020). *IEMA climate change principles: Delivering a sustainable future*

Institute of Environmental Management & Assessment (IEMA) (2020a) EIA Guide to: Climate Change Resilience and Adaptation.

Institute of Environmental Management & Assessment (IEMA) (2020b) GHG Management Hierarchy. Assessing Greenhouse Gas Emissions and Evaluating their Significance

Institute of Environmental Management & Assessment (IEMA) (2022) Assessing Greenhouse Gas Emissions and Evaluating their Significance

O'Loughlin, N. 'Embodied CO2 of housing construction in Ireland', Architecture Ireland, 247, pp.70-71. (https://www.ecocem.ie/wp-content/uploads/2016/08/ECE008- Environmental-CO2-and-other-PolluntantsEmbodied_CO2_of_housing_construction_in_Ireland.pdf)

The National Climate Change Risk Assessment (NCCRA) was published in May 2024 (EPA, 2024).

Transport Infrastructure Ireland (TII) (2022a) PE-ENV-01104: Climate Guidance for National Roads, Light Rail and Rural Cycleways (Offline & Greenways) – Overarching Technical Document

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Meath County Council - Viewing Purposes Only!

Transport Infrastructure Ireland (TII) (2022b) TII Roads Emissions Model (REM) Online Tool

Transport Infrastructure Ireland (TII) (TII 2021) Sustainability Implementation Plan – Our Future

UK Highways Agency (2019) UK Design Manual for Roads and Bridges (DMRB) Volume 11 Environmental Assessment, Section 3 Environmental Assessment Techniques, Part 14 LA 114 Climate

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# 10 NOISE AND VIBRATION

## 10.1 Introduction

This chapter of the Environmental Impact Assessment Report (EIAR) provides a detailed evaluation of the potential effects arising from noise and vibration associated with the construction and operational phases of the Proposed Development. The assessment has been carried out in accordance with relevant national and international guidance documents and best practice standards.

The chapter begins with a description of the existing acoustic environment, established through baseline noise monitoring undertaken at selected locations representative of nearby noise-sensitive receptors. This baseline data forms the foundation for assessing the significance of any changes in noise and vibration levels resulting from the Proposed Development.

The potential effects of both construction activities (including site preparation, earthworks, and building operations) and operational activities (such as increased traffic flows, plant and equipment operation, or other relevant sources) are examined in relation to the identified baseline conditions.

Where potential adverse effects are identified, appropriate mitigation measures are proposed to minimise or eliminate such effects, in line with the principles of good acoustic design and planning policy guidance. The residual effects, taking into account the effectiveness of these measures, are then assessed.

This chapter aims to ensure that noise and vibration considerations are fully integrated into the planning and design process, and that the Proposed Development can proceed without giving rise to significant or unacceptable effects on the surrounding environment or sensitive receptors.

### 10.1.1 Quality Assurance and Competence of Experts

This chapter of the EIAR has been prepared by Wave Dynamics Limited an Acoustic Consultancy specialising in noise and vibration. The EIAR chapter was prepared by Shannon Doherty | Senior Acoustic Consultant, Shannon has over 12 years' experience in building acoustics and environmental noise and has experience in numerous similar planning stage EIAR assessments. Shannon's qualifications include BSc (Hons) in Music Technology, IOA Diploma in Acoustics and Noise Control. He is a member of the Institute of Acoustics.

This report was peer reviewed by James Cousins, Managing Director | Principal Consultant with Wave Dynamics who has extensive experience in assessing noise and vibration from road and rail infrastructure on commercial and residential developments. James is an experienced consultant. His qualifications include BSc (Hons) in Construction Management and Engineering, Pg Cert in Construction Law and Diploma in Acoustics and Noise Control (Institute of Acoustics) and an IOA Competence Cert in Building Acoustic Measurements. James is a member of both Engineers Ireland (MIEI) and the Institute of Acoustics (MIOA) and is the current SITRI Chairman.

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## 10.2 Study Methodology

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This assessment will examine the likely effects of sound pressure levels generated by the Proposed Development located approximately 2.5km west of Drogheda town centre, within the southwestern environs of Drogheda, County Meath, adjacent to the Meath–Louth County border. Noise calculations have been used to predict and assess the likely effect of the new development on the existing noise sensitive receptors. This section addresses the potential noise and vibration effect from the Proposed Development.

For the purpose of the assessment 'sensitive receptors' terminology used describes any persons, locations or otherwise that may be susceptible to changes because of the Proposed Development. The primary noise effects associated with the Proposed Development are likely to be due to:

- Site clearance works;
- Building construction works;
- Vehicles entering and exiting the site; and,
- Traffic along local road network.

The assessment of the noise and vibration effects has been undertaken with reference to the most appropriate guidance documents relating to environmental noise and vibration which are set out within the relevant sections of this chapter. In addition to the operational and construction elements of the project, the inward noise effect has been considered as part of this chapter given the proximity of the development to the M1 Motorway.

In addition to specific noise guidance documents, the following guidelines were considered and consulted for the purposes of this chapter:

- Design Manual for Roads and Bridges Volume 11 Section 3 Part 7 (HD 213/11 – Revision 1) (The Highways Agency et al., 2011);
- BS 8233:2014 Guidance on sound insulation and noise reduction for buildings;
- BS 5228-1:2009+A1:2014 Code of practice for noise and vibration control on construction and open sites – Part 1: Noise;
- ISO 1996-1:2016 Acoustics - Description, measurement and assessment of environmental noise. Part 1: Basic quantities and assessment procedures;
- ISO 1996-2:2017 Acoustics - Description, measurement and assessment of environmental noise Part 2: Determination of sound pressure levels;
- ISO 9613-1:1993 Acoustics - Attenuation of sound during propagation outdoors -- Part 1: Calculation of the absorption of sound by the atmosphere;
- ISO 9613-2:1996 Acoustics - Attenuation of sound during propagation outdoors -- Part 2: General method of calculation;
- British Standard BS 6472-1:2008 Guide to evaluation of human exposure to vibration in buildings;
- Institute of Acoustics, Chartered Institute of Environmental Health, & Association of Noise Consultants. (2017). *ProPG: Planning & noise – New residential development*.
- Environmental Protection Agency (2016) Guidance Note for Noise (NG4): Licence Applications, Surveys and Assessments in Relation to Scheduled Activities;
- Guidelines for the Treatment of Noise & Vibration in National Road Schemes, National Roads Authority, Revision 1, 25th October 2004; and

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- County Meath Noise Action Plan 2024 – 2028.

The noise and vibration study has been undertaken using the following methodology:

- A baseline environmental noise survey has been undertaken in the vicinity of the subject site in order to characterise the existing baseline noise environment and to assess the character of the existing noise.
- A review of the most applicable standards and guidelines has been conducted in order to set a range of acceptable noise and vibration criteria for the construction and operational phases of the Proposed Development.
- Predictive statistical calculations have been performed during the construction phase of the project at the nearest sensitive locations to the development site.
- Predictive modelling using statistical calculations have been performed to assess the potential effects associated with the operation of the development at the most sensitive locations surrounding the development site;
- Inward noise effect has been considered to protect the residents of the development and;
- Mitigation measures have been proposed to reduce, where necessary, the identified potential outward effects relating to noise and vibration from the Proposed Development.

### 10.2.1 Assessment Criteria

#### *10.2.1.1 Construction Phase – Noise*

The County Meath Noise Action Plan 2024 – 2028 does not outline specific construction noise limits within the Noise Action Plan, therefore noise limits outlined in BS5228-1:2009+A1 have been adopted as the criteria for this project.

BS5228-1:2009+A1 has been adopted as the criteria for this project as it provides guidance and procedures for managing and minimising noise from construction and demolition activities to protect workers and the public from disturbance and health hazards. The standard details how to control noise by predicting noise levels, assessing impact, and implementing noise control methods.

BS5228-1:2009+A1 represents the industry's best practices for noise control on construction sites. It promotes a proactive approach to identifying and addressing potential noise issues. Many councils and local authorities will require adherence to BS5228-1:2009+A1 as part of the planning approval process for construction projects, especially those near residential areas or sensitive environments.

BS5228-1 takes into consideration the effect of the ambient noise at the noise sensitive receptor as follows:

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*Table 10-1: BS 5228 threshold levels.*

| Assessment category and threshold value period | Threshold value, in decibels (dB) ($L_{Aeq}$) | | |
|---|---|---|---|
| | Category A[1] | Category B[2] | Category C[3] |
| Daytime (07:00 – 19:00) and Saturdays (07:00 – 14:00) | 65 | 70 | 75 |
| Evenings and weekends [4] | 55 | 60 | 65 |
| Night-time (23:00 to 07:00hrs) | 45 | 50 | 55 |

Note 1: Category A: threshold values to use when ambient noise levels (when rounded to the nearest 5dB) are less than these values.

Note 2 Category B: threshold values to use when ambient noise levels (when rounded to the nearest 5dB) are the same as category A values.

Note 3: Category C: threshold values to use when ambient noise levels (when rounded to the nearest 5dB) are higher than category B values.

Note 4: 19:00 – 23:00 weekdays, 13:00 – 23:00 Saturdays and 07:00 – 23:00 Sundays

#### *10.2.1.2 Construction Phase Vibration*

The County Meath Noise Action Plan 2024 – 2028 does not contain guidance relating to vibration limits. Best practice guidance is taken from British Standard BS 5228:2009 + A1 2014 Code of Practice for Noise and Vibration Control on Construction and Open Sites - Part 2 Vibration.

British Standard BS 5228-2:2009+A1:2014 has been adopted for this project as it provides guidance on vibration control on construction and open sites, detailing procedures for minimising vibration to protect people and prevent building damage from construction activities like piling, ground treatment, and the use of heavy machinery. It offers recommendations on vibration measurement using Peak Particle Velocity (PPV), provides vibration limits for sensitive locations, and outlines best practices for managing vibration impacts and community relations. The standard provides a comprehensive framework for managing vibration and outlining recommended procedures and control measures.

BS 5228-2:2009+A1:2014 represents the industry's best practices for vibration control on construction sites. It promotes a proactive approach to identifying and addressing potential vibration issues. Many councils and local authorities will require adherence to British Standard BS 5228-2:2009+A1:2014 as part of the planning approval process for construction projects, especially those near residential areas or sensitive environments.

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The standard recommends that for a soundly constructed residential property and similar structures (in good repair), the threshold for minor or cosmetic (i.e. non-structural) damage should be taken as a Peak Particle Velocity (PPV) (in frequency range of predominant pulse) of 15mm/s at 4Hz increasing to 20mm/s at 15Hz and 50mm/s at 40Hz and above. Allowable vibration values (in terms of peak particle velocity) at the closest part of sensitive property to the source of vibration are outlined in Table 10-2 below.

*Table 10-2: BS 5228:2009 + A1 2014 Allowable Vibration Values*

| Allowable vibration (in terms of peak particle velocity) at the closest part of sensitive property to the source of vibration, at a frequency of: | | | |
|---|---|---|---|
| **Building Type** | **Less than 15Hz** | **15 to 40Hz** | **40Hz and above** |
| Light framed structures/ residential buildings | 12 mm/s | 20 mm/s | 50 mm/s |

### *10.2.1.3 Operational Phase – Noise*

#### 10.2.1.3.1 Meath Agglomeration Noise Action Plan 2024 – 2028

The County Meath Noise Action Plan 2024 – 2028, does not included any specific noise limits with regard to operational noise of commercial premises. Guidance has been sought from other applicable standards for such noise limits, EPA NG4 Guidance note for Noise: Licence Applications, Surveys and Assessments in Relation to Scheduled Activities has been adopted and used throughout the assessment.

The EPA NG4 Guidance Note (updated 2016) has been adopted for this project as it provides detailed guidance for Irish licensed facilities and their consultants on conducting noise surveys and assessments to evaluate and control noise impacts on the local environment and communities. It specifies recommended methodologies for noise monitoring, assessment, and mitigation to ensure compliance with environmental noise licence requirements for scheduled activities. Licensees use NG4 to demonstrate regulatory compliance, minimize noise pollution, and establish best practices for noise management, which helps protect public health and quality of life from potential adverse noise effects.

#### 10.2.1.3.2 BS4142:2014: Methods for Rating and Assessing Industrial and Commercial Sound.

BS4142 describes a method for the assessment of commercial, industrial and background noise to quantify its effect on persons outside of a residential dwelling. BS 4142 has become the de facto standard for compliance investigation. In addition to the specified broadband noise levels, the standards provide objective and subjective methods for the assessment of the impulsivity and tonality of the noise sources. This allows for a penalty/ correction to be applied to the measured noise level of the source (LAeq) to give the rating level (LAr,T).

BS 4142 provides procedures in determining if the noise in question is likely to give rise to complaints from residents in the vicinity. BS 4142 states that one should 'obtain an initial estimate of the impact of the specific sound by subtracting the measured background sound level from the rating level and consider the following:

- +10 dB or more indicates that complaints are likely,
- + 5 dB is of marginal significance, and;

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- The rating level is more than 10 dB below the measured background noise level, then this is a positive indication that complaints are unlikely.

BS4142 outlines guidance for penalty corrections to be applied to the noise sources in question should the noise source have one of the following characteristics:

- The noise contains a distinguishable, discreet, continuous tone (whine, or hum),
- The noise contains distinct impulses (i.e. bangs),
- The noise is intermittent or:
- The noise is irregular.

#### 10.2.1.3.3 Internal Receivers within the Development

To protect the amenity of the future residents of the development criteria for the assessment of inward noise effect have been developed.

#### 10.2.1.3.4 ProPG: Professional Practice Guidance on Planning & Noise

ProPG 2017 is used to assess airborne noise from transport sources including road, rail and aircraft noise. The aim of the document is to provide a good design process which considers the internal acoustic environment at an early stage in the design process. The guidance was prepared by the Institute of Acoustics, the Association of Noise Consultants and the Chartered Institute of Environmental Health and is based on the findings by the World Health Organisation in relation to noise effect on humans. Its adoption is considered best practice for assessing the potential noise effect on the future occupants for residential developments.

The guidance is primarily designed for residential developments however it can be applied to other development types including developments where people require appropriate noise levels for rest and sleep. This includes residential care homes, hospitals etc. The guidance advocates a holistic design process which considers the site, its location and likely suitability for the development at an early stage.

The two primary stages of the ProPG design approach are summarised as follows:

Stage 1 – The first stage is to undertake an initial high-level noise risk assessment of the proposed site considering the noise levels (measured and or predicted) to identify any noise risks. This would include consideration of the current noise environment, future use and future noise levels; and,

Stage 2 –The second stage is a full detailed assessment of the Proposed Development covering the “Four Key Elements”:

- Good Acoustic Design Process,
- Internal Noise Level Guidelines
- External Amenity Area Noise Assessment; and
- Assessment of Other Relevant Issues.”

Stage 2 provides recommendations to the decision maker on one of four possible recommendations:

- “Planning consent may be granted without any need for noise conditions;”
- “Planning consent may be granted subject to the inclusion of suitable noise conditions; “

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- "Planning consent should be refused on noise grounds in order to avoid significant adverse effects ("avoid"); or, "
- "Planning consent should be refused on noise grounds in order to prevent unacceptable adverse effects ("prevent").

Section 3 of the ProPG outlines the recommended approach decision makers should followi in coming to their conclusions based on the recommendations of the Acoustic Design Statement Figure 10-1- illustrates the ProPG approach.

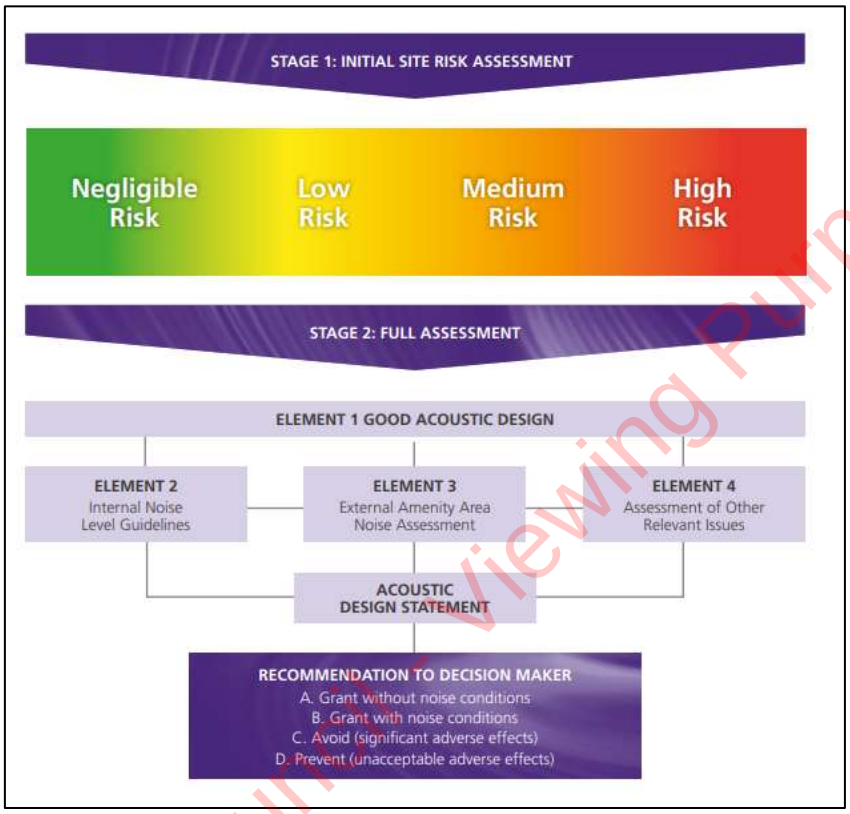



*Figure 10-1*

#### 10.2.1.3.5 Internal Noise Levels

Table 10-3 below outlines the recommended internal noise levels from BS 8233:2014 within living accommodation for residential buildings for dining, resting and sleeping. These limits are in line with the ProPG and the World Health Organisation Guidelines.

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*Table 10-3: BS 8233:2014 internal noise criteria –Residential Buildings*

| Activity | Location | 07:00 to 23:00 Hrs | 23:00 to 07:00 Hrs |
|---|---|---|---|
| **Resting** | Living Room | 35 dB $L_{Aeq}$, 16 hour | - |
| **Dining** | Dining Room/Area | 35 dB $L_{Aeq}$, 16 hour | - |
| **Sleeping (daytime resting)** | Bedroom | 35 dB $L_{Aeq}$, 16 hour | 30 dB $L_{Aeq}$, 8 hour<br>45dB $L_{AFmax}$[1] |

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#### 10.2.1.3.6 External Amenity Space Noise Levels

With regard to noise levels in external amenity spaces ProPG 2017 refers to the BS8233:2014 guidance which states that:

*"the acoustic environment of external amenity areas that are an intrinsic part of the overall design should always be assessed, and noise levels should ideally not be above the range 50 – 55 dB LAeq,16hr".*

It also states that:

"These guideline values may not be achievable in all circumstances where development might be desirable. In such a situation, development should be designed to achieve the lowest practicable noise levels in these external amenity spaces but should not be prohibited."

After mitigation/with mitigation, if the adverse noise effects are still above the recommended noise levels they can be offset by providing an alternative amenity space to partially offset the noise effect by providing access to:

- "a relatively quiet facade (containing openable windows to habitable rooms) or a relatively quiet externally ventilated space (i.e. an enclosed balcony) as part of their dwelling; and/or
- a relatively quiet alternative or additional external amenity space for sole use by a household, (e.g. a garden, roof garden) or
- a relatively quiet, protected, nearby, external amenity space for sole use by a limited group of residents as part of the amenity of their dwellings; and/or
- a relatively quiet, protected, publicly accessible, external amenity space (e.g. a public park or a local green space designated because of its tranquillity) that is nearby (e.g. within a 5 minute walking distance). The local planning authority could link such provision to the definition and management of Quiet Areas under the Environmental Noise Regulations."

[1] Regular individual noise events (for example, scheduled aircraft or passing trains) can cause sleep disturbance. A guideline value may be set in terms of SEL or LAmax,F, depending on the character and number of events per night. Sporadic noise events could require separate values. In most circumstances in noise sensitive rooms at night (e.g. bedrooms) good acoustic design can be used so that individual noise events do not normally exceed 45dB LAFmax more than 10 times a night.

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BS 8233:2014 elaborates on this further, it acknowledges that it may not always be necessary or feasible to ensure that noise levels remain within the guideline values. In respect of gardens and patios, BS 8233:2014 states:

*"however it is also recognized that these guideline values are not achievable in all circumstances where development might be desirable. In higher noise areas, such as city centres or urban areas adjoining the strategic transport network, a compromise between elevated noise levels and other factors, such as the convenience of living in these locations or making efficient use of land resources to ensure development needs can be met, might be warranted. In such a situation, development should be designed to achieve the lowest practicable levels in these external amenity spaces but should not be prohibited."*

Both BS8233:2014 and ProPG 2017 do not advise that development should be restricted in areas with undesirable noise levels. The standards recommend that mitigation measures are put in place where practicable to achieve the recommended noise levels for the external amenity spaces. It notes that this may not be practical in all situations and local or governmental policy should take precedence in these situations.

#### *10.2.1.4 Operational Phase – Vibration*

##### 10.2.1.4.1 BS5228-2:2009+A1:2014 Code of Practice for Noise and Vibration Control on Construction and Open Sites.

There are no specific vibration criteria for buildings in Ireland. The vibration criteria for this project are based on BS 5228-2:2009+A1:2014, which provides guidance relating to the assessment of human response to vibration in terms of PPV. Table 10-4 below outlines the range of vibration values and the associated potential effects on humans.

*Table 10-4: Project vibration criteria*

| Vibration Level, PPV | Effect |
|---|---|
| **0.14mm/s** | Vibration might be just perceptible in the most sensitive situations for most vibration frequencies. At lower frequencies people are less sensitive to vibration. |
| **0.3mm/s** | Vibration might be just perceptible in residential environments. |
| **1mm/s** | It is likely that a vibration level of this magnitude in residential environments will cause complaint. |

Vibrations typically become perceptible between 0.15mm/s to 0.3mm/s and may become annoying or disturbing at higher magnitudes. Higher levels of vibration are tolerated for single events or events of short duration, particularly during construction projects. For example, groundbreaking or piling can typically be tolerated at vibration levels up to 2.5mm/s if adequate public relations are in place and timeframes are known.

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## 10.3 The Existing and Receiving Environment (Baseline Situation)

### 10.3.1 Baseline Environment

A baseline noise survey was conducted at the site located approximately 2.5km west of Drogheda town centre, within the southwestern environs of Drogheda, County Meath. The purpose of the survey was to quantify the existing noise environment to predict its effect on the surrounding area.

The baseline noise survey consisted of both attended and unattended noise measurements and was conducted across the development site from 25th March 2025 to 28th March 2025.

### 10.3.2 Site Description and Measurement Locations

The Proposed Development site is located approximately 2.5km west of Drogheda town centre. The site comprises a greenfield area extending to 9.20 ha consisting of open fields used for agriculture. To the west and south, the site is bordered by agricultural lands, with the M1 motorway located approximately 200 metres to the west of the site.

The site adjoins lands to the west and south that are subject to a strategic reserve of zoned lands which are not, at present, available for residential development.

To the north, the site is bounded by Rathmullan Road and the Boyne Greenway, beyond which lies the River Boyne, approximately 40 metres from the site boundary. To the east, the site is also bounded by Rathmullan road, across which lies existing residential developments comprising two- storey terrace houses and three-storey duplexes. These properties are considered to be the nearest noise sensitive locations (NSLs).

The noise measurement locations are illustrated in Figure 10-2 below and consist of the following:

- Unattended Noise Monitoring at L1,
- Attended Noise Monitoring at L1, A1 and A2.

Noise Monitoring Location L1

Noise monitoring location L1 is located on the western boundary of the Proposed Development site. This location was chosen as it is representative of existing noise levels at the most exposed boundary of the Proposed Development site, susceptible to road traffic noise from the M1 motorway.

Noise Monitoring Location A1

Attended noise monitoring was completed to supplement the unattended noise data. Noise monitoring location A1 was located on the south-western boundary of the Proposed Development site.

Noise Monitoring Location A2

Noise monitoring location A2 was located near existing residential properties on the eastern boundary of the Proposed Development site. This location was chosen as it is representative of existing noise levels at the closest existing noise sensitive receptors in proximity to the Proposed Development site.

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*Figure 10-2: Indicative core residential site location and measurement locations L1, A1 – A2*

#### *10.3.2.1 Survey Methodology and Personnel*

The attended and unattended noise survey was completed by Daniel Cousins (Field Engineer) between the 25th - 28th March 2025.

#### *10.3.2.2 Unattended Noise Measurements*

An unattended noise logger was deployed in location L1. The monitor was deployed on the 25th March 2025 at 11:45hrs and collected on 28th March 2025 at 11:45hrs. The logger was positioned approximately 1.5 metres above the ground. The logger was calibrated before and after the measurements and no significant drift was noted. Measurements were filtered for periods of unsuitable weather conditions (where appropriate).

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*Figure 10-3: Unattended measurement setup.*

#### *10.3.2.3 Attended Measurements*

Attended noise measurements were undertaken in general accordance with ISO 1996-1:2016 using ISO Class 1 sound analysers. Attended measurements were taken in durations of 15 minutes at the locations L1, A1 and A2. Care was taken to avoid any effect on the measurement of extraneous noise, acoustic vibration, or interference. During the attended noise measurements, the sound level meter was positioned at approximately 1.5m above the ground level. The weather conditions were calm (wind less than 5m/s) with no rain, a wind shield was used for the duration of the attended surveys. The noise logger was calibrated before and after the survey and no significant drift was noted.



*Figure 10-4: Attended Measurement Set Up*

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#### *10.3.2.4 Survey Period*

The unattended noise survey period was conducted over three days, between the 25th March 2025 to 28th March 2025.

The attended noise measurements were obtained on the25th March 2025 and the 28th March 2025.

#### *10.3.2.5 Noise Measurement Equipment*

A Class 1 sound level meter/noise logger in general accordance with IEC 61672-1:2013 was used for both the attended and unattended noise measurements. Table 10-5 below summarises the measurement equipment used.

*Table 10-5: Noise Measurement Equipment*

| Description | WD Asset Number | Model | Serial No. | Calibration Certificate No. | Calibration Due Date |
|---|---|---|---|---|---|
| **Sound Level Meter** | SLM2 | NOR140 | 1406532 | SLM230218 | 27/09/2025 |
| **Sound Level Meter** | SLM8 | Nor 140 | 1403345 | SLM250258 | 09/05/2027 |
| **Calibrator** | CAL4 | Larson Davis CAL200 | 21085 | AC240249 | 29/06/2025 |

#### *10.3.2.6 Subjective Survey Notes*

During the attended noise survey, the following noise sources were identified: road traffic noise (RTN), bird song and wind blowing on foliage.

### 10.3.3 Noise Measurement Results

Attended and unattended measurements were taken to measure the noise levels across the site. This section outlines the results of the attended noise measurements.

#### *10.3.3.1 Attended Measurement Results*

Table 10-6 below outlines the results of the attended measurement survey.

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*Table 10-6: Attended Noise Measurement Results*

| Measurement | | | | Measured Noise Levels | | |
|---|---|---|---|---|---|---|
| Location | Date | Time (hrs) | Duration (mins) | LAeq dB | $L_{AFmax}$ dB | $L_{A90}$ dB |
| **A2** | 25/03/2025 | 10:22 | 60 mins | 56 | 67 | 54 |
| **L1** | 25/03/2025 | 11:02 | 15 mins | 60 | 66 | 57 |
| **A1** | 25/03/2025 | 11:26 | 15 mins | 58 | 67 | 56 |
| **A1** | 28/03/2025 | 12:15 | 15 mins | 66 | 74 | 64 |

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### *10.3.3.2 Unattended Monitoring Results*

*Table 10-7: Unattended Noise Measurement Results*

| Start Date | $L_{Aeq,16hour}$ 07:00 - 23:00 dB | $L_{night}$ ($L_{Aeq,8hour}$ 23:00 - 07:00) dB | $L_{den}$ (00:00 - 00:00) dB | 10th highest night-time $L_{AF-max}$ | $L_{A90}$ (23:00 - 07:00) dB | $L_{A90}$ (07:00 - 19:00) | $L_{A90}$ (19:00 - 23:00) |
|---|---|---|---|---|---|---|---|
| **25/03/2025** | 59 | 57 | 62 | 65 | 50 | 56 | 55 |
| **26/03/2025** | 61 | 56 | 64 | 68 | 48 | 59 | 54 |
| **27/03/2025** | 61 | 58 | 65 | 69 | 50 | 59 | 57 |
| **28/04/2025** | 64 | N/A[1] | N/A[1] | N/A[1] | N/A[1] | 61 | N/A[1] |

(1) Shortened measurement duration.
(2) Where night-time period is referred to the date is the date the measurement commenced on at 23:00hrs and finished at 07:00hrs on the following calendar day.
(3) Arithmetic average of $L_{AF90}$.

### *10.3.3.3 $L_{AFmax}$ Noise Levels*

Based on the project criteria outlined in section 10.2.1, the internal $L_{AFmax\ 15min}$ inside the dwelling bedrooms cannot exceed 45dBA more than 10 times per night. With regard to the maximum noise levels ProPG states:

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"A site should not be regarded as negligible risk if the $L_{Amax,F}$ exceeds, or is likely to exceed 60 dB more than 10 times a night. A site should be regarded as high risk if the LAmax,F exceeds, or is likely to exceed 80 dB more than 20 times a night."

Figure 10-5 below highlights the average number of $L_{AFmax}$ events recorded on the noise logger per night based on a 15min measurement interval. Based on the ProPG risk assessment of the $L_{AFmax}$ noise levels, the site is not considered high risk as there are not typically more than 20 occurrences exceeding 80dB $L_{AFmax}$ per night.

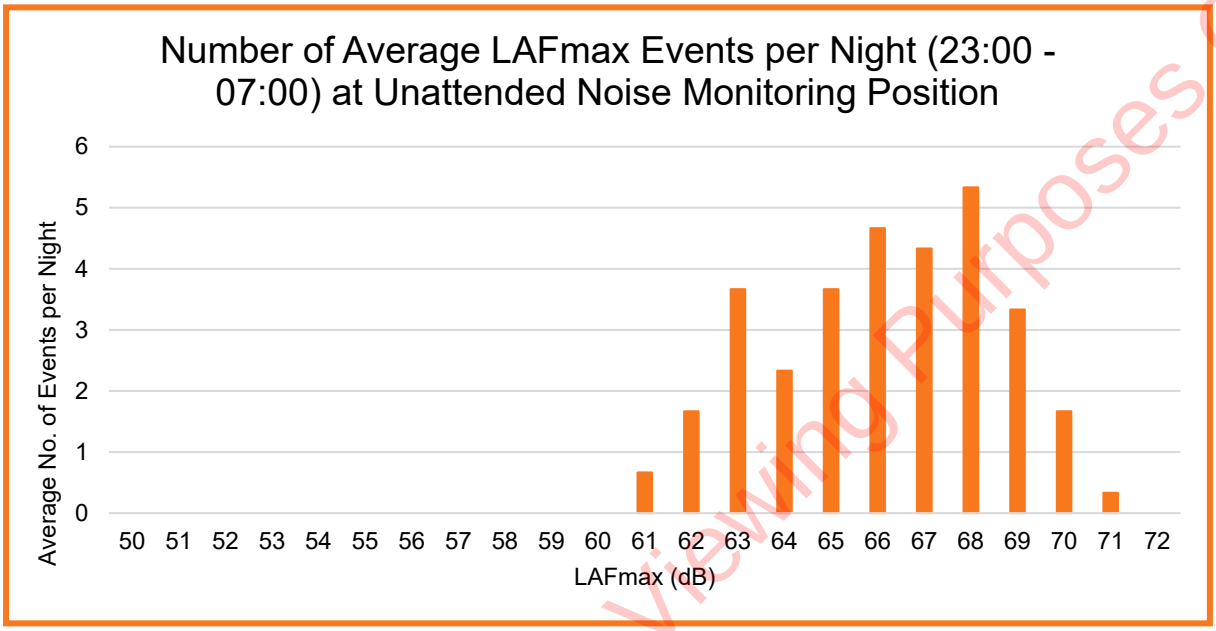



*Figure 10-5 Average recorded $L_{AFmax}$ events per night based on 15min measurement intervals*

#### *10.3.3.4 Discussion of Measurement Results*

The baseline noise monitoring survey consists of both weekday and weekend noise data. Measurements were obtained at various locations throughout the Proposed Development site to establish the existing noise conditions within the boundary of the site. The ambient noise consisted of traffic noise from local roads in the surrounding area as well as aircraft and railway noise.

#### *10.3.3.5 Weather Conditions for Monitoring Period*

Good weather conditions were noted in general during the deployment and collection during the attended survey, with winds of less than 5 m/s and no rain for the attended surveys.

### 10.3.4 Existing Noise Sources

#### *10.3.4.1 Road Traffic Noise*

The M1 motorway is located approximately 200 metres to the west of the Proposed Development site. Road traffic noise is the dominant noise source in the area. Section 10.5.2.6.3.1 discusses predicted road traffic noise levels across the Proposed Development site.

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## 10.4 Characteristics of the Proposed Development

A comprehensive description of the Proposed Development is presented in Chapter 2 of this EIAR

### 10.4.1 Construction Phase

The noise and vibration effects have been considered for both the construction and operational phases of the scheme. During the construction stage of the scheme there will be various sources of noise and vibration from mobile plant and construction activities.

### 10.4.2 Operational Phase

The primary sources during the operational phase will be long term and include additional traffic, plant/equipment and noise from communal spaces and operational creche.

## 10.5 Potential Effect of the Proposed Development

### 10.5.1 Construction Phase

This section outlines the assessment criteria and potential effect from the construction phase of the Proposed Development.

#### *10.5.1.1 Assessment Criteria for Construction Phase Noise*

Noise limits outlined in BS5228-1:2009+A1 have been adopted as the criteria for this project. BS5228-1 takes into consideration the effect of the ambient noise at the noise sensitive receptor as follows:

*Table 10-8: BS5228 Threshold Levels*

| Assessment category and threshold value period | Threshold value, in decibels (dB) ($L_{Aeq}$) | | |
|---|---|---|---|
| | Category A[1] | Category B[2] | Category C[3] |
| Daytime (07:00 – 19:00) and Saturdays (07:00 – 14:00) | 65 | 70 | 75 |
| Evenings and weekends [4] | 55 | 60 | 65 |
| Night-time (23:00 to 07:00hrs) | 45 | 50 | 55 |

Note 1: Category A: threshold values to use when ambient noise levels (when rounded to the nearest 5dB) are less than these values.

Note 2 Category B: threshold values to use when ambient noise levels (when rounded to the nearest 5dB) are the same as category A values.

Note 3: Category C: threshold values to use when ambient noise levels (when rounded to the nearest 5dB) are higher than category B values.

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Note 4 19:00 – 23:00 weekdays, 13:00 – 23:00 Saturdays and 07:00 – 23:00 Sundays.

BS5228 defines a noise sensitive location as:

"any occupied premises outside a site used as a dwelling (including gardens), place of worship, educational establishment, hospital or similar institution, or any other property likely to be adversely affected by an increase in noise level".

#### *10.5.1.2 Assessment Criteria for Construction Phase Vibration*

The County Meath Noise Action Plan does not contain guidance relating to vibration limits. Best practice guidance is taken from British Standard BS 5228:2009 + A12014 Code of Practice for Noise and Vibration Control on Construction and Open Sites - Part 2 Vibration.

The standard recommends that for a soundly constructed residential property and similar structures (in good repair), the threshold for minor or cosmetic (i.e. non- structural) damage should be taken as a Peak Particle Velocity (PPV) (in frequency range of predominant pulse) of 15mm/s at 4Hz increasing to 20mm/s at 15Hz and 50mm/s at 40Hz and above. Allowable vibration values (in terms of peak particle velocity) at the closest part of sensitive property to the source of vibration are outlined in Table 10-9 below.

*Table 10-9: BS 5228:2009 + A1 2014 Allowable Vibration Values*

| **Allowable vibration (in terms of peak particle velocity) at the closest part of sensitive property to the source of vibration, at a frequency of:** | | | |
|---|---|---|---|
| **Building Type** | **Less than 15Hz** | **15 to 40Hz** | **40Hz and above** |
| Light framed structures/ residential buildings | 12 mm/s | 20 mm/s | 50 mm/s |

#### *10.5.1.3 Construction Phase Effects*

The construction phase noise effect of the Proposed Development considers the following;

- Noise sources,
- Construction Phase Vibration,
- Construction Noise Thresholds,
- Construction Noise Predictions; and
- Construction Traffic Noise.

#### *10.5.1.4 Noise Sources*

Construction will be completed in one phase, provisionally planned as commencing in 2026 and will have a 24-month construction programme.

Working hours for the Construction Phase will be between 08.00 and 17.00 Monday to Friday. Special construction operations may occasionally need to be carried out outside typical working hours in order to minimise disruption to the surrounding area.

The construction of the Proposed Development will involve several phases, including site setup, substructure, superstructure, and external and internal finishes. During these phases, noise will be generated from various construction activities, including the operation of heavy machinery and equipment. Given the existing noise environment and the distance between

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the development and surrounding noise-sensitive receptors, mitigation measures will be necessary to control the potential noise effect. These measures may include the use of site hoarding to provide screening, local screening around particularly noisy plant and equipment, and the selection of low-noise plant where possible. Likely construction plant equipment is outlined below and broken down to the predicted usage during each construction phase.

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| Construction Phase | Item of Plant (BS 5228-1:2009+A1:2014 Ref) | Noise Level ($L_{Aeq}$ at 10m dB(A)) | On Time of 9 hr day |
|---|---|---|---|
| **Site setup** | Diggers | 77 | 4 Hours |
| | carpentry tools | 78 | 3 Hours |
| | Skill saw | 84 | 2 Hours |
| **Demolition** | Excavators | 77 | 2 Hours |
| | Concrete breaker | 92 | 2 Hours |
| | Pulveriser mounted on excavator | 80 | 2 Hours |
| | Handheld pneumatic breaker | 83 | 2 Hours |
| | Drills (into concrete) | 89 | 2 Hours |
| | Dumper 7t | 81 | 5 Hours |
| | Lorry Idiling | 80 | 3 Hours |
| | Telescopic Handler | 71 | 5 Hours |
| **Substructure** | Excavators | 77 | 2 Hours |
| | Concrete breaker | 92 | 2 Hours |
| | Con saws | 84 | 6 Hours |
| | Rail saw | 85 | 2 Hours |
| | Drills (into concrete) | 89 | 2 Hours |
| | Tower Crane | 77 | 6 Hours |
| | Dumper 7t | 81 | 6 Hours |
| | Cement Mixer (Discharging | 75 | 6 Hours |
| | Lorry Idling | 80 | 4 Hours |
| | Telescopic Handler | 71 | 6 Hours |
| | Tower Crane Generator | 82 | 9 Hours |
| | Concrete Pump | 78 | 3 Hours |
| | Vibrodisplacement and Stone Columns | 80 | 1 Hours |
| **Superstructure** | Tower Crane | 77 | 6 Hours |
| | Tower Crane Generator | 82 | 9 Hours |
| | Drills (into concrete) | 89 | 2 Hours |
| | Power tools | 70 | 4 Hours |
| | Impact steel | 69 | 2 Hours |
| | Hammer | 69 | 1 Hour |
| | Dumper 7t | 81 | 6 Hours |
| | Cement Mixer (Discharging | 75 | 2 Hours |
| | Lorry Idling | 80 | 5 Hours |
| | Telescopic Handler | 71 | 8 Hours |

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| Construction Phase | Item of Plant (BS 5228-1:2009+A1:2014 Ref) | Noise Level ($L_{Aeq}$ at 10m dB(A)) | On Time of 9 hr day |
|---|---|---|---|
| | Concrete Pump | 78 | 1 Hour |
| **External Finishes** | Hand Tools | 70 | 5 Hours |
| | Con saw | 84 | 2 Hours |
| | Vibratory Roller | 82 | 4 Hours |
| | Ashpalt Paver and Tipper | 85 | 3 Hours |
| | Excavators | 77 | 2 Hours |

*Table 10-10: Predicted Construction Operations for Construction Phase*

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#### *10.5.1.5 Construction Phase Vibration*

Vibration effect is not anticipated for most of the construction phase; some vibration is expected to be generated during the substructure stage where earthworks are likely. During this phase, compliance with vibration criteria is evaluated using a combination of measured data and general estimates, as predicting vibration effects over distance is challenging due to variations in soil composition and ground conditions. While precise predictions are difficult to achieve, general estimates based on measured vibration levels at specific distances, as outlined in BS5228-2, provide a practical method for assessing potential effects, as outlined above in Table 10-9.

#### *10.5.1.6 Construction Noise Limits*

The project criteria for construction noise are based on the guidelines outlined in Table 10-8 and the background noise levels in the area. The criteria for construction noise are detailed in Table 10-11 below. The distance to the nearest noise-sensitive locations (NSLs) is determined by the closest receiver within each NSL grouping, as each NSL encompasses multiple houses or sensitive receivers. According to the baseline survey results and the guidance provided in BS 5228 Part 1, the threshold levels for construction noise that may significantly affect the closest noise-sensitive locations are outlined in Table 10-11..

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*Figure 10-6: Site Location, Measurement Locations L1, A1-A2 and Noise Sensitive Locations*

Table 10-11 outlines the distances form each NSL to the centre of the site.

| Noise Sensitive Location | *Distance To the Centre of The Site (m)* | *Ambient Noise dB(A) Leq* | *Noise Limit dB(A) [1] Leq* |
|---|---|---|---|
| **NSL1** | 166 | 56 | 65 |
| **NSL2** | 290 | 56 | 65 |
| **NSL3** | 359 | 56 | 65 |
| **NSL4** | 295 | 56 | 65 |

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| Noise Sensitive Location | *Distance To the Centre of The Site (m)* | *Ambient Noise dB(A) Leq* | *Noise Limit dB(A) [1] Leq* |
|---|---|---|---|
| **NSL5** | 232 | 56 | 65 |
| **NSL6** | 198 | 56 | 65 |
| **NSL7** | 245 | 56 | 65 |
| **NSL8** | 280 | 56 | 65 |

*Table 10-11: Construction Noise Limits for NSLs*

1) 65 dB (A) upper threshold limit

For the appropriate assessment period (i.e. daytime in this instance) the ambient noise level is determined and rounded to the nearest 5dB. If the noise generated by construction activities exceeds the appropriate category value, then a significant effect is deemed to occur.

For large infrastructure projects a limit of 65dB(A) is set as the appropriate upper limit for construction noise within urban areas near main roads in heavy industrial areas. This is considered an appropriate upper limit for construction noise.

#### *10.5.1.7 Construction Phase Noise Predictions*

Construction noise for the site has been predicted based on the information provided. A summary of the expected equipment, noise levels and operating times are provided in Table 10-10. The noise sources are assumed to be located at the centre of the site. The prediction methodology in BS5228 has been used to calculate the noise level over a typical day for each of the main construction stages. The closest noise sensitive receptors are the residential dwellings with a line of sight to the Proposed Development located at NSL1,5,6,7 and 8, as illustrated in Figure 10-6 above.

Using construction plant noise levels outlined above, predicted construction noise levels at each noise sensitive location have been calculated. Table 10-12 below summarises the predicted construction noise level at each noise sensitive location. Examination of the results indicate the construction noise without mitigation is predicted to achieve the noise limits during all stages of the development.

| Location | Noise Limit | Predicted Cumulative Noise Level (Construction Noise + Ambient) With no mitigation LAeq, dB | | | | |
|---|---|---|---|---|---|---|
| | | Site Set Up | Demolition | Substructure | Superstructure | External Finishes |
| **NSL1** | 65 dB | 59 | 66 | 65 | 64 | 62 |
| **NSL2** | 65 dB | 57 | 61 | 60 | 58 | 56 |

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| Location | Noise Limit | Predicted Cumulative Noise Level (Construction Noise + Ambient) With no mitigation LAeq, dB | | | | |
|---|---|---|---|---|---|---|
| | | Site Set Up | Demolition | Substructure | Superstructure | External Finishes |
| **NSL3** | 65 dB | 48 | 60 | 59 | 58 | 56 |
| **NSL4** | 65 dB | 57 | 59 | 58 | 54 | 39 |
| **NSL5** | 65 dB | 58 | 61 | 60 | 56 | 41 |
| **NSL6** | 65 dB | 58 | 62 | 61 | 58 | 43 |
| **NSL7** | 65 dB | 57 | 60 | 59 | 56 | 41 |
| **NSL8** | 65 dB | 57 | 59 | 58 | 55 | 40 |

*Table 10-12: Predicted Construction Phase Noise Levels Without Mitigation*

The calculations set out above are based on assumed site construction works and a combination of the plant operating at the same time i.e. worst-case scenario across the site.. In reality this will not be the case however the assessment has been conducted based on the assumption of a worst case scenario.

Noise mitigation measures are not required to reduce the effect of construction noise during any stages of construction of the Proposed Development. However, as good practice, the appointed contractor may want to implement noise mitigation measures, therefore best practice control measures for noise from construction sites have been outlined in Section 10.6 of this Chapter.

#### *10.5.1.8 Construction Traffic Noise*

Construction traffic is estimated at approx. 120 No. two-way trips (including HGV and workforce movements) per day, with a worst-case scenario occurring during the excavation phase, with an estimated total of 80 two-way HGV trips per day.

The Design Manual for Roads and Bridges (DMRB) states that it takes a 25% increase in traffic flows in order to get a 1dBA increase in traffic noise levels. Traffic flow increases associated with the Proposed Development will be significantly less than 25% and hence traffic noise level increases will be significantly less than 1dBA.

It is generally accepted that it takes an approximate 3dBA increase in noise levels to be perceptible to the average person (Ref: Planning Policy Guidance Note 24 [PPG24 - Planning & Noise).

Construction traffic noise levels associated with the Proposed Development will not have a negative effect on nearby noise sensitive locations (NSLs). The magnitude of effect is no effect.

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*Table 10-13: Likely Effect Associated with Change in Construction Traffic Noise Levels*

| Magnitude of Effect | Increase in Traffic Noise Levels (dB) |
|---|---|
| **No Effect** | Less than 1.0 |
| **Minor** | Greater than or equal to 1.0 and less than 3.0 |
| **Moderate** | Greater than or equal to 3.0 and less than 5.0 |
| **Major** | Greater than or equal to 5.0 |

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### 10.5.2 Operational Phase

This section outlines the assessment criteria and potential effect from the operational phase of the Proposed Development.

#### *10.5.2.1 Assessment Criteria for Operational Phase Noise*

The main potential sources of operational noise from the development are traffic movements and car parking, operational creche and external/public amenity spaces.

The County Meath Noise Action Plan does not specify any operational noise limits but typically most local authorities define these as follows:

- Daytime 55 dB (A) $L_{eq}$
- Night-time 45 dB (A) $L_{eq}$ (or exceptionally 40 dB(A) $L_{eq}$).

In order to assist with the interpretation of the noise associated with vehicular traffic on public roads, Table 10-14 below offers guidance as to the likely effect associated with any particular change in traffic noise level (Source DMRB, 2011).

*Table 10-14: Magnitude of Road Traffic Effects*

| Noise Change, dB | Magnitude of Effect |
|---|---|
| **0** | No Change |
| **0.1 – 2.9** | Negligible |
| **3 – 4.9** | Minor |
| **5 – 9.9** | Moderate |
| **10+** | Major |

BS 4142: Methods for Rating and Assessing Industrial and Commercial Sound

provides procedures in determining if the noise in question is likely to give rise to complaints from residents in the vicinity. BS 4142 states that one should 'obtain an initial estimate of the impact of the specific sound by subtracting the measured background sound level from the rating level and consider the following:

BS 4142 states that and exceedance of the noise source of the background noise by:

- +10 dB or more indicates that complaints are likely,
- + 5 dB is of marginal significance, and;

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• The rating level is more than 10 dB below the measured background noise level, then this is a positive indication that complaints are unlikely.

BS4142 outlines guidance for penalty corrections to be applied to the noise sources in question should the noise source have one of the following characteristics:

- The noise contains a distinguishable, discreet, continuous tone (whine, or hum),
- The noise contains distinct impulses (i.e. bangs),
- The noise is intermittent or:
- The noise is irregular.

#### *10.5.2.2 Assessment Criteria for Operational Phase Vibration*

Operational vibration affecting noise sensitive locations has been scoped out as there is no known significant vibration sources associated with the Proposed Development. There will be no significant operational vibration effects. Baseline vibration monitoring was not undertaken within the Proposed Development site.

#### *10.5.2.3 Operational Phase Effect*

This section includes an assessment of the operational noise effects for noise from plant noise, operational creche, communal amenity space and road traffic noise.

The specific plant and equipment for the operational phase of the Proposed Development have not yet been finally determined. The heating and cooling methodology will be developed as part of the design development stage; therefore, plant noise limits have been set out in this section of the report. As part of the building design an acoustic consultant should be engaged to review the plant noise emissions from the development to ensure that the upper noise limits outlined in this report are achieved.

The operational noise effect of the Proposed Development considers the following:

- Operational Noise Sources
- Operational Phase Vibration
- BS4142 Assessment.

#### *10.5.2.4 Noise Prediction Modelling*

Following the survey, a computational noise model of the development using SoundPLAN 9.1 modelling software was developed to establish the noise levels from the development in a worst-case scenario. The software implements the algorithms contained in ISO 9613-1 and ISO 9613-2. The noise model considers:

- Distance attenuation,
- Source and receptor locations,
- Barrier effects (buildings, walls etc)
- Topographical elevations,
- Ground effects and absorption,
- Source sound power levels,
- Directivity and orientation of the source,
- Atmospheric attenuation and meteorological effects,

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The noise model has been calibrated against the attended and unattended noise measurements. SoundPLAN 9.1 software predicts road traffic noise levels in accordance with Calculation of Road Traffic Noise (UK Department for Transport, 1998). This is the recognised appropriate standard for road traffic noise prediction as per TII (Transport Infrastructure Ireland).

The following information was input into the model:

- Development layout provided by architect's drawings.
- Google Maps terrain and elevation data of surrounding area.
- Road traffic noise levels calibrated based on attended measurement survey onsite.

### *10.5.2.5 Operational Noise Sources*

#### 10.5.2.5.1 Plant Noise

*10.5.2.5.1.1 Residential Properties - Houses*

Residential properties will be fitted with a heat pump, located to the rear of the property, typically within 1 metre of the rear façade, see Figure 10-7. The exact operational noise level of proposed heat pumps has not yet been finalised; example operating noise levels of a typical heat pump are outlined in Table 10-15 below.

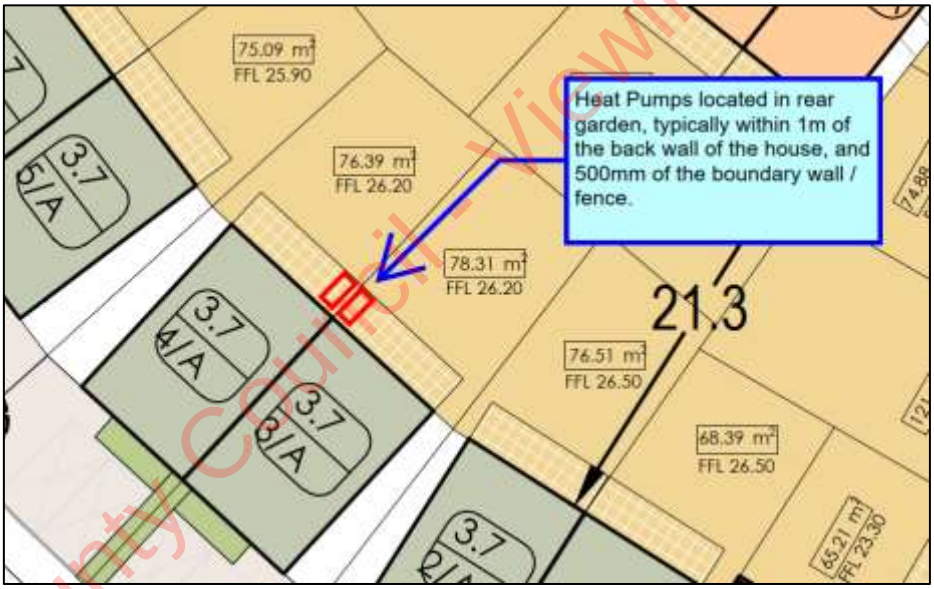



*Figure 10-7: Location of Residential Heat Pumps*

*Table 10-15: Example Heat Pump Technical Specifications*

| Heat Pump Specification | Model | |
|---|---|---|
| Operating Temperature | Logi Air 4kH Operating Sound Power Level (Lw) | Logic Air 5kH Operating Sound Power Level (Lw) |
| Sound Power Level (EN12102-1) 35°C | 52 dB(A) | 52 dB(A) |
| Sound Power Level (EN12102-1) 55°C | 52 dB(A) | 52 dB(A) |

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An operating Sound Power Level of 52 dB(A) equates to a Sound Pressure Level of 41(dB) $L_{Aeq}$ at 1 metre using the follow equation; SPL = SWL - $10\log_{10}(4\pi r^2)$, where r=1.

BS8233 stipulates that average noise levels in bedrooms should not exceed 35 dB $L_{Aeq}$ daytime, (07:00 -23:00 hrs) and 30 dB $L_{Aeq}$ nighttime (23:00 – 07:00 hrs).

Assuming 10 -15 dB attenuation through an open window, internal noise predictions within residential properties would be less than BS8233:2014 night-time design criteria of 30 dB in bedrooms and 35 dB within habitable rooms. Operational noise from external heat pumps will not have a negative effect on future residential occupants.

#### *10.5.2.5.1.2 Creche*

A purpose built creche will be located in “The Westfield” area of the Proposed Development, as illustrated in Figure 10-8 below.




*Figure 10-8: Location of Creche*

Operational mechanical plant and equipment associated with the proposed creche is not available at this stage. In the absence of information regarding the operational plant at this planning stage the approach has been taken to determine suitable operational noise emission limits.

The closest representative noise monitoring location to the location of the proposed creche is noise monitoring location L1.

To be reflective of a worst-case scenario, the lowest $L_{A90}$ measurements from the daytime $L_{A90}$, 1hour (07:00-23:00) and night-time $L_{A90}$, 15min (23:00-07:00) at noise monitoring location L1 have been used to determine suitable operational noise emission limits.

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Table 10-16 below contains the daytime and night-time noise threshold limit to be adhered to for any plant/equipment noise from the proposed creche. A BS4142 assessment can be undertaken at detailed design stage if details of any proposed mechanical plant and equipment is available. Despite the absence of certain information at this time, the assessment conducted is robust and can be confidently relied upon. Compliance with derived noise threshold limits for creche plant/equipment outlined in Table 10-16 will ensure no negative effect on nearby receptors.

*Table 10-16: Derived Noise Threshold Limits for Creche Plant/Equipment Noise*

| Noise Monitoring Location | Background Sound Levels $L_{A90}$ dB | Penalty for Tonality dB(A) | Derived Noise Threshold Limit dB(A) Leq at Noise Sensitive Locations |
|---|---|---|---|
| **L1** | 56 (Daytime) | TBC | 56 |
| | 44 (Night-time) | TBC | 48 |

#### *10.5.2.5.1.2.1 Creche External Play Area*

The creche will have external play areas at the western façade at ground level and second floor level. It has been assumed that the creche play areas will be in use from 08:00hrs to 18:00hrs and will have a noise level of 60dBA LW / m2 as per the SoundPLAN 9.1 library source levels for a small children's playground.

Noise model calculations predict that operational noise levels associated with the creche external play areas will not have a negative effect on nearby noise sensitive locations (NSLs).

### 10.5.2.5.2 Operational Road Traffic Noise

Operational phase traffic volumes have been provided by Waterman Moylan Consulting Engineers Limited for use in this chapter. Figure 10-9 below outlines the operational traffic volumes for the base year "Do-Nothing" and "Do-Something" scenarios for the years 2027, 2032 and 2042.

Operational traffic volumes can be read in detail in Chapter 13 Traffic and Transport, submitted as part of this EIAR.

| Junction Number | Name | Base Flows | DO NOTHING SCENARIOS | | | DO SOMETHING SCENARIOS | | | %HGV | Speed (kph) | Link Length (m) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 2025 | 2028 | 2033 | 2043 | 2028 | 2033 | 2043 | | | |
| 1 | Site Access Road (W) | - | - | - | 2,175 | 1,804 | 1,804 | 3,979 | 0.00% | 30 | 30 |
| | Oldbridge Road (N) | - | 145 | 145 | 649 | 358 | 358 | 862 | 0.00% | - | 50 |
| | Rathmullan Road (E) | 1,750 | 1,843 | 1,948 | 5,606 | 3,603 | 3,708 | 7,366 | 0.00% | 50 | 100 |
| | Local Road (S) | 1,750 | 1,843 | 1,948 | 3,467 | 1,931 | 2,036 | 3,555 | 0.60% | 50 | 100 |
| 2 | Rathmullan Road (W) | 8,351 | 9,500 | 10,001 | 13,595 | 11,054 | 11,555 | 15,148 | 0.45% | 50 | 100 |
| | Rathmullan Road (E) | 12,026 | 13,069 | 13,790 | 16,490 | 14,008 | 14,730 | 17,430 | 1.40% | 50 | 100 |
| | Marley's Lane (S) | 11,655 | 12,680 | 13,382 | 15,856 | 13,516 | 14,218 | 16,692 | 1.35% | 50 | 100 |
| 3 | Rathmullan Road (W) | 10,645 | 11,570 | 12,208 | 14,581 | 12,397 | 13,036 | 15,409 | 1.19% | 50 | 100 |
| | R132 (N) | 28,411 | 30,115 | 31,819 | 34,970 | 30,644 | 32,349 | 35,500 | 2.04% | 50 | 100 |
| | R132 (E) | 22,577 | 23,991 | 25,347 | 27,857 | 24,406 | 25,762 | 28,272 | 2.09% | 50 | 100 |
| 4 | Donore Road (W) | 12,434 | 13,269 | 14,015 | 15,537 | 13,732 | 14,478 | 16,001 | 2.94% | 50 | 100 |
| | Marley's Lane (N) | 12,668 | 13,739 | 14,499 | 17,154 | 14,585 | 15,345 | 18,000 | 1.49% | 50 | 100 |
| | Donore Road (E) | 12,376 | 13,228 | 13,972 | 15,510 | 13,545 | 14,289 | 15,826 | 2.64% | 50 | 100 |

*Figure 10-9: Predicted AADT Data*

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The Design Manual for Roads and Bridges (DMRB) states that it takes a 25% increase in traffic flows in order to get a 1dBA increase in traffic noise levels. Traffic flow increases associated with the Proposed Development will be significantly less than 25% and hence traffic noise level increases will be significantly less than 1dBA.

It is generally accepted that it takes an approximate 3dBA increase in noise levels to be perceptible to the average person (Ref: Planning Policy Guidance Note 24 [PPG24 - Planning & Noise).

Operational traffic noise levels associated with the Proposed Development will not have a negative effect on nearby noise sensitive locations (NSLs). The magnitude of effect is no effect.

*Table 10-17: Likely Effect Associated With Change In Construction Traffic Noise Levels*

| Magnitude of Effect | Increase in Traffic Noise Levels (dB) |
|---|---|
| **No Effect** | Less than 1.0 |
| **Minor** | Greater than or equal to 1.0 and less than 3.0 |
| **Moderate** | Greater than or equal to 3.0 and less than 5.0 |
| **Major** | Greater than or equal to 5.0 |

#### 10.5.2.5.3 Noise from Communal/ Amenity Spaces

For the purpose of the noise model it is assumed the open public spaces/amenity spaces will be operational during daytime hours 07:00hrs-23:00hrs, and night-time hours 23:00hrs – 02:00hrs, assuming approx. 75 persons occupying the large public open space along the northern and eastern boundary, and approx. 9 – 12 persons within each of the smaller amenity spaces throughout the development. As a worst-case scenario, it is assumed that 1 in 3 persons will be talking. Table 10-18 below outlines the noise spectrum used to model an amenity space occupied with any given number of persons.

*Table 10-18: AAAC Patron noise levels at 1m distance for the outdoor communal space.*

| Description | Octave Band Centre Frequency (Hz) Sound Reduction Index Dn,e dB | | | | | | | Overall dBA |
|---|---|---|---|---|---|---|---|---|
| | 125 | 250 | 500 | 1k | 2k | 4k | 8k | |
| **1 person talking with normal voice** | 47 | 56 | 58 | 52 | 48 | 44 | 39 | 59 |

Noise model calculations predict that operational noise levels associated with the outdoor public open spaces/amenity spaces will not have a negative effect on nearby noise sensitive locations (NSLs).

#### 10.5.2.5.4 Operational Phase Vibration

Operational vibration affecting noise sensitive locations has been scoped out as there will be no significant vibration sources associated with the operational phase of Proposed Development.

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### *10.5.2.6 Inward Noise Effect*

The stage one risk assessment is used to assess the site for potential risks that may occur in terms of noise effect. The ProPG sets out four categories of risk: 1) negligible, 2) low, 3) medium or 4) high risk.

The risk assessment also considers the risk based on the number of $L_{AFmax}$ events per night as follows:

- A site should not be considered a negligible risk if more than 10 $L_{AFmax}$ events exceed 60 dB during the night period and;
- A site should be considered a high risk if the $L_{AFmax}$ events exceed 80 dB more than 20 times per night.

Paragraph 2.9 of ProPG states that,

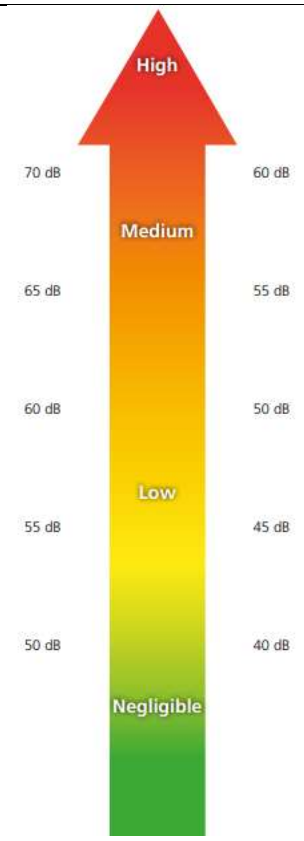
"The noise risk assessment may be based on measurements or prediction (or a combination of both) as appropriate and should aim to describe noise levels over a "typical worst case" 24-hour day either now or in the foreseeable future."

To assess the noise effect with the ProPG risk categories a baseline noise survey was undertaken on the site to quantify the existing noise environment.

*Table 10-19 ProPG Stage 1 Risk Assessment of Existing Noise Levels*

| **Noise Risk Assessment** | | **Risk Assessment Rating** | |
|---|---|---|---|
| **Indicative Day-time Noise Levels $L_{Aeq,16hour}$** | **Indicative Night-time Noise Levels $L_{Aeq,8hour}$** | **Daytime Noise Levels** | **Night-time Noise Levels** |
| | | **High Risk** | **High Risk** |
| | | N/A | N/A |
| | | **Medium Risk** | **Medium Risk** |
| | | The western facades of residential properties on the western boundary of the Proposed Development are most exposed to road traffic and are at medium to low risk of noise. | The western facades of residential properties on the western boundary of the Proposed Development are most exposed to road traffic and are at medium to low risk of noise. |
| | | **Low Risk** | **Low Risk** |
| | | The majority of the development site is at low risk from noise. | The full development site is at low risk from noise. |
| | | **Negligible Risk** | **Negligible Risk** |

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| | | |
|---|---|---|
|  | N/A | N/A |

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This section outlines the full acoustic design assessment in line with ProPG guidance.

#### 10.5.2.6.1 Element 1: Good Acoustic Design Process

ProPG states the following in relation to Good Acoustic Design Process:

“A good acoustic design process takes a multi-faceted and integrated approach to achieve optimal acoustic conditions, both internally (inside noise-sensitive parts of the building(s)) and externally (in spaces to be used for amenity purposes).”

“Good acoustic design should avoid “unreasonable” acoustic conditions and prevent “unacceptable” acoustic conditions (these terms are defined in Element 2). Good acoustic design does not mean overdesign or gold plating of all new development but seeking to deliver the optimum acoustic outcome for a particular site”.

The following considerations are recommended by ProPG:

- Check the feasibility of relocating or reducing noise levels from relevant sources.
- Consider options for planning the site or building layout.
- Consider the orientation of proposed building(s).
- Select construction types and methods for meeting building performance requirements.
- Examine the effects of noise control measures on ventilation, fire regulation, health and safety, cost, CDM (construction, design and management) etc.
- Assess the viability of alternative solutions.
- Assess external amenity area noise.

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#### 10.5.2.6.2 Discussion of Good Acoustic Design

##### *10.5.2.6.2.1 Mitigation of Sources*

The development is located close to road noise sources which are not on or part of the development therefore it is not possible to reduce or relocate the relevant noise sources.

##### *10.5.2.6.2.2 Site Layout and Orientation*

To the west and south, the site is bordered by agricultural lands, with the M1 motorway located approximately 200 metres to the west of the site. To the north, the site is bounded by Rathmullan Road and the Boyne Greenway, beyond which lies the River Boyne, approximately 40 metres from the site boundary. To the east, the site is also bounded by Rathmullan Road, across which lies existing residential developments comprising two- storey terrace houses and three-storey duplexes.

##### *10.5.2.6.2.3 Effect of Noise Control Measures*

The effects for noise control measures on other building elements including ventilation have been considered. It is generally impractical to provide ventilation via openable windows in urban/built up areas. An open window will provide 10-15dB of attenuation which in built-up urban and suburban areas is not practical. ProPG makes reference to specific cases in suburban areas where the development is beside a transport link. In general, the good acoustic design process in these areas is to provide ventilation via attenuated natural vents or mechanical ventilation. This allows the occupants to have adequate ventilation with adequate noise levels.

##### *10.5.2.6.2.4 External Amenity*

ProPG states the following with regard to external amenity spaces:

"The acoustic environment of external amenity areas that are an intrinsic part of the overall design should always be assessed and noise levels should ideally not be above the range 50 – 55 dB $L_{Aeq,16hr}$."

The external amenity source noise levels are considered in section 10.5.2.6.2.4 of this Chapter.

#### 10.5.2.6.3 Element 2 – Assessment of Internal Noise Levels

This section outlines the assessment of the building envelope including the façade noise modelling, and specification of the glazing requirements.

A noise intrusion assessment for the Proposed Development has been completed in accordance with the methodology outlined in the International Standard ISO EN 12354-3:2017 Building acoustics — Estimation of acoustic performance of buildings from the performance of elements — Part 3: Airborne sound insulation against outdoor sound. The standard provides a method for calculating the indoor noise levels due to for instance road traffic noise.

The calculation method accounts for multiple factors including:

- The external noise level at the affected building façade.
- The frequency characteristics of the specific noise source (i.e. road traffic noise).
- The sound insulation performance of each façade element (i.e. Windows, Walls, Roof…).
- The area of each façade element.

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- Direct and flanking transmission paths.

This section outlines the building envelope requirements based on the measurements outlined in Section 10.3.3. Facade, wall, glazing, roof and ventilation specifications have been determined to achieve the internal noise level criteria for the development. The specification has been determined in accordance with EN ISO 12354-3: 2017 based on the measured and predicted façade day and night noise levels and the room and facade dimensions from the drawings provided.

The building envelope specification should be confirmed by the acoustic consultant at design stage once the internal layouts and building envelope design development has been completed. Any changes to the assumed ventilation strategy and glazing requirement should be considered as part of the review and it should be based on the internal noise levels cited in this report.

#### *10.5.2.6.3.1 Predicted Road Noise Levels*

Incident road traffic noise levels have been predicted across all facades of the development for both the day and nighttime period.

##### *10.5.2.6.3.1.1 Daytime Noise Levels*

Figure 10-10, Figure 10-11 and Figure 10-12 outline the predicted road traffic noise levels across the Proposed Development site for the daytime period at 1.5m, 4m and 6.5m height respectively.




*Figure 10-10 Predicted $L_{Aeq,16hour}$ (07:00Hrs – 23:00Hrs) at 1.5m height for the future development*

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*Figure 10-11 Predicted $L_{Aeq,16hour}$ (07:00Hrs – 23:00Hrs) at 4.5m height for the future development*




*Figure 10-12 Predicted $L_{Aeq,16hour}$ (07:00Hrs – 23:00Hrs) at 6.5m height for the future development*

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#### *10.5.2.6.3.1.2 Night-time Noise Levels*

Figure 10-13, Figure 10-14 and Figure 10-15 outline the predicted road traffic noise levels across the proposed site for the night-time period at 1.5m, 4m and 6.5m height respectively.




*Figure 10-13 Predicted $L_{Aeq,8hour}$ (23:00Hrs – 07:00Hrs) at 1.5m height for the future development.*




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*Figure 10-14 Predicted $L_{Aeq,8hour}$ (23:00Hrs – 07:00Hrs) at 4.5m height for the future development.*




*Figure 10-15 Predicted $L_{Aeq,8hour}$ (23:00Hrs – 07:00Hrs) at 6.5m height for the future development*

#### *10.5.2.6.3.2 Building Envelope Specification*

This section outlines the building envelope requirements based on the measurements outlined in 10.3 of this Chapter. Facade, wall, glazing, roof and ventilation specifications have been determined to achieve the internal noise level criteria for the development. The specification has been determined in accordance with EN ISO 12354-3: 2017 based on the predicted façade day and night noise levels and the room and facade dimensions from the drawings provided.

The building envelope specification should be confirmed by the acoustic consultant at design stage once the internal layouts and building envelope design development has been completed. Any changes to the assumed ventilation strategy and glazing requirement should be considered as part of the review and it should be based on the internal noise levels cited in this report

##### *10.5.2.6.3.2.1 Glazed Elements and Ventilation*

The glazed elements and ventilation openings are typically the acoustically weakest elements of any façade. The required sound insulation performance of façade glazed elements and ventilation openings is outlined in Table 10-20 below.

It is required that the glazing, frame and seals as a whole achieve the performance when the window is in the closed position. The performance requirements outlined in Table 10-20 below.

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are considered to provide adequate sound insulation to achieve the relevant day and night internal design goals respectively.

*Table 10-20: Glazing Requirements*

| Façade | Glazed Elements (Frame & Glazing) Sound Insulation Requirements (Indicative require-ments equal or approved) | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Octave Band Frequency Requirements[1] R dB | | | | | | Glazing Acoustic Performance dB Rw | Façade Ventilation Requirement |
| | 125 Hz | 250 Hz | 500 Hz | 1000 Hz | 2000 Hz | 4000 Hz | | |
| **Red** | 22 | 22 | 30 | 37 | 42 | 44 | 34dB Rw | 36dB Dn,e,w (1) |
| **Blue** | Standard Double Glazing[3] | | | | | | | 31dB Dn,e,w (1) |

1.Natural ventilation assumed throughout, the performance cited for the ventilator is in the open position. Should this change to mechanical ventilation the above specification may be reduced. An acoustic consultant should be engaged to assess the level of reduction appropriate to maintain the internal noise level criteria.
2.The calculation assumes a maximum of 1 ventilation opening per bedroom at the above specification.
3.Standard double glazing assumes a construction of two panes of 3mm glass with a 10mm cavity achieving a minimum 29dB RW, equal or approved.




*Figure 10-16: Glazing Mark Up*

It is important to note that the requirements outlined above are minimum requirements for the glazed element as a whole. The octave band values outlined in Table 10-20 are indicative and specific to the assessed glazing type obtained from the Wave Dynamics glazing database. Equal or improved glazing to that outlined in Table 10-20 must be implemented to meet the minimum project requirements.

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We understand the ventilation strategy is proposed as a naturally ventilated system with a maximum of one ventilation opening per bedroom. Should the ventilation strategy change to a mechanical ventilation strategy Wave Dynamics should be engaged to provide an appropriate sound insulation performance requirement for any updates to the glazing requirements. Typically, the use of a natural ventilation strategy will lead to an enhanced glazing specification compared to a sealed mechanical ventilation system. This assessment is based on the windows in closed position.

It is recommended that the facade supplier provide laboratory tests confirming the airborne sound insulation performance of the façade. In the absence of suitable laboratory data a composite sound reduction index calculation undertaken by a suitably qualified acoustic consultant can be used to demonstrate compliance. In the unlikely event that compliance is not achieved, the sound insulation performance of the façade will be improved to ensure compliance.

The calculations for the glazing specification in Table 10-20 are based on the use of the vents in Table 10-20. The performance value, and that used in the calcs is given in Table 10-21 below.

*Table 10.21: Ventilation specification (in the open position)*

| Façade | Description | Octave Band Centre Frequency (Hz) Sound Reduction Index Dn,e dB | | | | | |
|---|---|---|---|---|---|---|---|
| | | 125 | 250 | 500 | 1k | 2k | 4k |
| Red | Acoustic trickle ventilator / Natural Vent ≥ Dn,e,w 36dB | 35 | 36 | 35 | 43 | 31 | 34 |
| Blue | Acoustic trickle ventilator / Natural Vent ≥ Dn,e,w 31dB | 31 | 30 | 30 | 34 | 28 | 30 |

#### *10.5.2.6.3.2.2 External Wall Construction*

Project requirements dictate that the façade wall construction will achieve a minimum sound insulation performance of 56dB RW. Typical façade construction such as concrete, blockwork, timber frame and brick offer high levels of sound insulation and will meet this requirement.

#### *10.5.2.6.3.2.3 Roof Construction*

The roof construction must achieve a minimum sound insulation performance of 50dB RW. Any skylights and glazing in the roof system to corridor or communal areas should be of standard double-glazed construction to meet a performance of minimum 29 dB Rw. If there are any skylights to habitable bedrooms Wave Dynamics should be informed to provide specific guidance in each case.

### 10.5.2.6.4 Element 3 – External Amenity Spaces

The external amenity spaces on the development include private balconies/terraces for the duplex buildings/apartments, gardens for the houses, large open public space to the north of the site, with smaller public spaces located throughout the development. All balconies/terraces, rear gardens, and public spaces are predicted to achieve the recommended desirable noise levels of 55dBA $L_{Aeq,16hour}$, with the exception of those properties located along the western boundary of the site, closest to the M1 motorway. Alternative amenity spaces have been provided for the residents of these apartments/duplex/houses in the form of public open space on the development. This is in line with ProPG Guidance.

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Based on the measured noise levels at the site and the noise model for the Proposed Development, it is predicted that the external noise levels in the vast majority of the external amenity spaces will achieve the ProPG recommendations for desirable external amenity noise levels of 50-55dBA $L_{Aeq,16hour}$.

#### 10.5.2.6.5 Element 4 – Assessment of Other Relevant Issues

ProPG Element 4 considers other issues which may remain relevant to the assessment, these issues are as follows:

- 4(i) compliance with relevant national and local policy.
- 4(ii) magnitude and extent of compliance with ProPG .
- 4(iii) likely occupants of the development.
- 4(iv) acoustic design v unintended adverse consequences and;
- 4(v) acoustic design v wider planning objectives.

#### 10.5.2.6.6 Compliance with Relevant National and Local Policy

There are no specific noise guidance or policy documents for residential developments. The County Meath Noise Action Plan refers to the ProPG as the relevant document for assessment of the noise effect on new residential developments as followed in this acoustic design statement

#### 10.5.2.6.7 Magnitude of Extent of Compliance with ProPG

This report demonstrates that all dwellings will meet the specified internal noise level requirements provided the guidance in this report is followed. External amenity spaces have been provided in line with the guidance set out in ProPG. Based on this the development is in general compliance with the ProPG requirements.

#### 10.5.2.6.8 Likely Occupants of the Development

Additional needs of the future occupants are not known at this stage however the needs of all potential occupants have been considered with the assessment of adequate internal noise levels and provision of adequate external amenity spaces to meet the needs of potential occupants.

#### 10.5.2.6.9 Acoustic Design v Unintended Adverse Consequences

When addressing noise reduction, it's important to consider factors beyond just sound insulation. For example, measures such as sealed windows can lead to problems like poor ventilation, overheating, or an unpleasant living environment. Effective acoustic design requires a comprehensive approach that integrates the acoustic environment and its potential consequences from the earliest stages of development. This ensures that solutions aimed at reducing noise intrusion do not create new issues for building occupants or the surrounding environment. The design has considered the effect of adverse consequences and mitigation has been provided by specification of the sound insulation and ventilation requirements.

#### 10.5.2.6.10 Acoustic Design v Wider Planning Objective

The wider planning objective is to deliver sustainable development that promotes good health and well-being. This wider planning objective is considered when following the ProPG guidance, a guideline document that promotes good health and well-being by encouraging

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good acoustic design in new residential developments, especially those exposed to transport noise.

#### 10.5.2.6.11 Stage 2 Assessment Conclusion

The stage 2 assessment considers all four  elements, the principles of good acoustic design have been followed.

The element 2 assessment has considered the measures required to provide an adequate acoustic environment with appropriate noise levels for internal spaces. The sound insulation and ventilation requirements have been specified based on the predicted façade noise levels.

The element 3 assessment of external amenity spaces has considered the noise effect on the development and the external amenity spaces. The appropriate provision of external amenity space has been provided through the use of balconies on suitable elevations, communal amenity spaces on the ground level and rear gardens in line with the ProPG guidance.

Other relevant issues have been considered including, local policy, unintended consequences and the wider planning objectives.

### *10.5.2.7 BS4142 Assessment*

Operational noise sources outlined in Section 10.5.2.4 of this Chapter illustrate compliance with noise criteria guidance.

Operational external mechanical plant and equipment associated with the proposed creche has not yet been confirmed. In the absence of information regarding the operational plant at this planning stage the approach has been taken to determine suitable operational noise emission limits as outlined in Section 10.5.2.5.1 above.

A BS4142 assessment can be undertaken at detailed design stage if details of any proposed mechanical plant and equipment is available. Despite the absence of certain information at this time, the assessment conducted is robust and can be confidently relied upon. Compliance with derived noise threshold limits for creche plant/equipment outlined in Table 10-16 will ensure no negative effect on nearby receptors.

### *10.5.2.8 Summary*

The following Table 10-22 summarises the identified likely significant effects during the construction phase of the Proposed Development before mitigation measures are applied.

*Table 10-22 Summary of Construction Phase Likely Significant Effects in the absence of mitigation*

| Quality | Significance | Duration | Type |
|---|---|---|---|
| **Negative** | Slight | Short-Term | Noise |
| **Neutral** | Imperceptible | Short-Term | Vibration |

The following Table 10-23 summarises the identified likely significant effects during the operational phase of the Proposed Development before mitigation measures are applied.

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*Table 10-23 Summary of Operational Phase Likely Significant Effects in the absence of mitigation*

| Quality | Significance | Duration | Type |
|---|---|---|---|
| **Neutral** | Slight | Long-Term | Noise |
| **Neutral** | Imperceptible | Long-Term | Vibration |

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### 10.5.3 Potential Cumulative Effects

Cumulative effects are considered in this EIAR in line with Section 3.7.3 of the EPA Guidelines on the Information to be Contained in Environmental Impact Assessment Reports (2022). Extant permissions and current live planning applications that have been taken into consideration for the purposes of determining cumulative effects are detailed in Table 10-24 10-24 and illustrated in Figure 10-17. For the purpose of this assessment planning applications within the jurisdiction of both Meath County Council and Louth County Council were considered, given the proximity of the site to the Meath-Louth County border.

The cumulative residual effects of the overall Proposed Development considering both the construction and operational phases, are primarily related to noise. Construction activities such as demolition and substructure will inevitably introduce noise into the environment. However, recommended mitigation measures outlined in Section 10.6 of this chapter will ensure that construction noise effects will be imperceptible at NSL's. During the operational phase, a marginal increase in traffic associated with the development is expected to result in a slight rise in ambient noise levels of up to 1dBA at certain NSL's. Operational external amenity area noise levels will not have an effect on NSL's.

Noise effects are anticipated to be negligible, localised, and compliant with relevant criteria, ensuring that they remain within acceptable levels. No other significant residual effects are expected following the implementation of appropriate mitigation measures during the construction phase.

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*Table 10-24 List of Cumulative Schemes*

| No. | Application Reg. Ref. | Address | Development Proposal | Decision Date |
|---|---|---|---|---|
| 1 | **MCC planning ref: 211757**<br><br>**ABP-313187-22 Planning Appeal** | South Of Oldbridge Manor, Rathmullan Road, Drogheda, Co. Meath | The construction of 26 no. dwellings consisting of 16no. 3 bed two storey semi-detached dwellings (Type B2/B3/E2), 4 no. 4 bed two storey semi-detached dwellings (Type D2), 6no. 3 bed two storey terraced dwellings (Type G2/G3/G4/G5/F) including all roads, footpaths, landscaping and site development works. A new pedestrian and cycle link is proposed to Sheephouse Road from the site. The vehicular access to the development will be from the public road at 'The Boulevard', Oldbridge Manor. A Natura Impact Statement will be submitted to the Planning Authority with the application. Significant further information/revised plans submitted on this application. | 08/03/2022<br>MCC: Granted with 24 no. conditions.<br><br>04/04/2022<br>ABP Appeal Decision Status: Live case stayed by Order of the High Court |
| 2 | **MCC Planning ref: 211669**<br><br>**ABP-313190-22**<br><br>**Planning Appeal** | South Of Oldbridge Manor, Rathmullan Road, Drogheda, Co. Meath | The construction of 96 no. dwellings consisting of 4 no. one-bed apartments accommodated in 1 pair of two-storey semi-detached maisonettes (type A & A1), 6 No.2 bedroom two storey terraced dwellings (type G, G1) and 83 no. 3 bedroom terraced and semi-detached dwellings (Type B2, B3, D2, D3, E2, G2, G3) and 3 no. 4 bed detached dwellings (Type H) including landscaping, new roads, footpaths, cycle paths and open space including play area and all associated works. Anew pedestrian and cycle link is proposed to Sheephouse Road from the site. The vehicular access to the development will be from the public road at 'The Boulevard', Oldbridge Manor. A Natura Impact Statement will be submitted to the Planning Authority with the application | 08/03/2022<br>MCC: Granted with 24 no. conditions<br><br>04/04/2022<br>ABP Appeal Decision Status: Live case stayed by Order of the High Court |
| 3 | **LCC Planning Ref: 22954** | Mell, Drogheda, Co. Louth | Permission for development on lands south of existing M1 Retail Park, bound by Trinity St and Barrack Lane, for: (i) provision of 10 no. single storey retail units including a part-licensed anchor retail supermarket store (Unit1), a DIY/Home store, including a garden centre (Unit 10), 8 no. smaller retail/commercial units, including a cafe and pharmacy (Units 2-8) and 1 no. single storey Drive-Thru Restaurant/Cafe unit, including external seating area. A deliveries area, service yard and ground mounted plant units will be provided to the side (south) and rear (west) of Retail Unit 1, a dedicated set down point is also proposed adjacent to the front entrance to Unit 1. Deliveries will also be accommodated to the rear (south) of proposed Units 2 - 10, with a truck turning area provided to the rear (south) of Unit 10. Dock levellers will be provided to the rear of Units 2 - 10 to facilitate | 08/09/2023<br>Granted with 20 no. conditions |

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| No. | Application Reg. Ref. | Address | Development Proposal | Decision Date |
|---|---|---|---|---|
| | | | loading and unloading of goods. A total of 311 no. car parking spaces are proposed to serve the development, including 23 no. accessible parking spaces, 2 no. click and collect spaces and 17 no. parent and child spaces. A bus parking area (4 spaces) is provided, 104 no. bicycle parking spaces are proposed . A partially covered pedestrian circulation space will be provided to the front of each of the units. (ii) Provision of 2 no. vehicular and pedestrian connection points to the existing MI Retail Park to the north will provide access to the development; (iii) internal roads, footpaths and pedestrian crossings; (iv) trolly bays, signage, hard and soft landscaping, boundary treatments, Electric Vehicle Charging spaces and lighting; (v) associated site and infrastructural works are also proposed which include foul and surface water drainage, plant areas, 3 no. ESB substations and (vi) all associated site development works. An EIAR and a NIS has been submitted with this application. *SFI received on 24/07/2023 which consists of: (a) a revised site layout comprising a substantially reduced quantum of retail/commercial development. The proposed development now comprises 3 no. units in total; see revised newspaper & site notices for full amended description* | |
| **4** | **LCC Planning Ref: 22975** | Leonards Cross, Slane Road, Mell, Drogheda, Co. Louth | Permission for construction of an 8,005sqm assisted living facility with a total of 98 accommodation units in a range of accommodation types as follows: A) 28 no. reablement studios designed to help people to retain or regain their skills and confidence so they can learn to manage again after a period of illness. B) 52 no. 1 bedroom assisted living suites, C) 16 no. 2 bedroom assisted living suites. D) 2 no. 1 bed units to be provided through the subdivision of an existing house on site for use as assisted living suites, or as staff/visitor accommodation. The proposed facility will include cafe/restaurant facilities, staff and administration spaces, nurses station, recreation rooms, meeting spaces, treatment rooms and landscaped gardens together with all associated site development works including boundary walls and fences, car parking, waste water pumping station, surface water attenuation and connections to pubic utilities, as well as plant rooms, a bin store, roof mounted solar panels and an ESB substation. The facility will deliver a range of tailored care packages to elderly residents on a rental basis only, none of the units will be made available for sale | 10/02/2023 Granted with 19 no. conditions |
| **5** | **LCC Planning Ref: 211283** | Old Slane Road & Mell, Tullyallen, Drogheda, Co. Louth | An application has been made to An Bord Pleanála for permission for a 237 no. dwellings in detached, semi-detached, terraced/townhouse, terraced/duplex and apartment form. Building range in height from 1 to 5 storeys in the following mix - 19 no. 1 bed, 98 no. 2 bed, 99 no. 3 bed and 21 no. 4 bed. Apartment block 5 will have an undercroft car park. All buildings proposed have the option for the installation of photovoltaic/solar panels. The development will provide for a creche with potential capacity for 65 children. Open public | 08/12/2021 Granted with 33 no. conditions |

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| No. | Application Reg. Ref. | Address | Development Proposal | Decision Date |
|---|---|---|---|---|
| | **(Amended by 260368 & 2460266)** | | space provided extends to c.9240sq.m. Construction of a footpath with public lighting from northern boundary along southern side of R168 providing pedestrian only connection to the M1 Retail Park. A single vehicular connection to the site is proposed from the Old Slane Road at the southern boundary. Full footpath connectivity will be provided along the Old Slane Rd eastwards to the junction with R168 at Leonards Cross. Works to Old Slane Rd provide for sections of footpath, revised road markings and public lighting. Full footpath connection will be available through site connecting Old Slane Rd to the south with R168 to the north and then on to the M1 Retail Park. All associated site development works incl. a pumping station and rising main, infrastructure and service provision, landscaping, boundary treatments, roads, footpaths and cycle paths, public lighting, ESB substation, electrical vehicle charging points, regrading/infilling of land levels, retaining walls/structures. A Natura Impact Statement is included | |
| **6** | **LCC Planning Ref: 2460514** | Mell, Drogheda, Co. Louth | Permission for development comprising a single warehouse unit, 2 no. site entrances, internal access through road and ancillary works including surface water drainage at Mell, over a proposal application site area of 3.38 ha. The proposed development will include 1 no. warehouse unit of 3,347 m2 in area. The unit has been placed to the east of the site and the yard area at the west, parallel to the main entrance road. The proposed warehouse unit will include ancillary office area of 476 m2 located at the south-eastern corner of the proposed warehouse unit. The yard area is approximately 2,616 m2 and comprises 3no. loading docks and 1no. ground level door, services area and provision for trailer parking. Staff and Visitors' car parking comprises 33 spaces (31 standard sizes and 2 accessible spaces), also provision of a bicycle parking area for 19 bicycles. A proposed internal access road of 516m will be developed, connecting the R166 regional road with the R168. This will include the development of 2 no. accesses, one access onto each of the regional roads. The access road will also include a segregated footpath and cycleway along its length. The development will include all ancillary servicing, surface water management infrastructure, soft landscaping and lighting. Surface water management infrastructure will include permeable paving, rainwater harvesting, underground attenuation tank and detention pond in addition to surface water drainage and a proposed connection point to an existing storm sewer on the R168. A Natura Impact Statement has been prepared for this application | 23/05/2025<br>Granted with 18 no. conditions |

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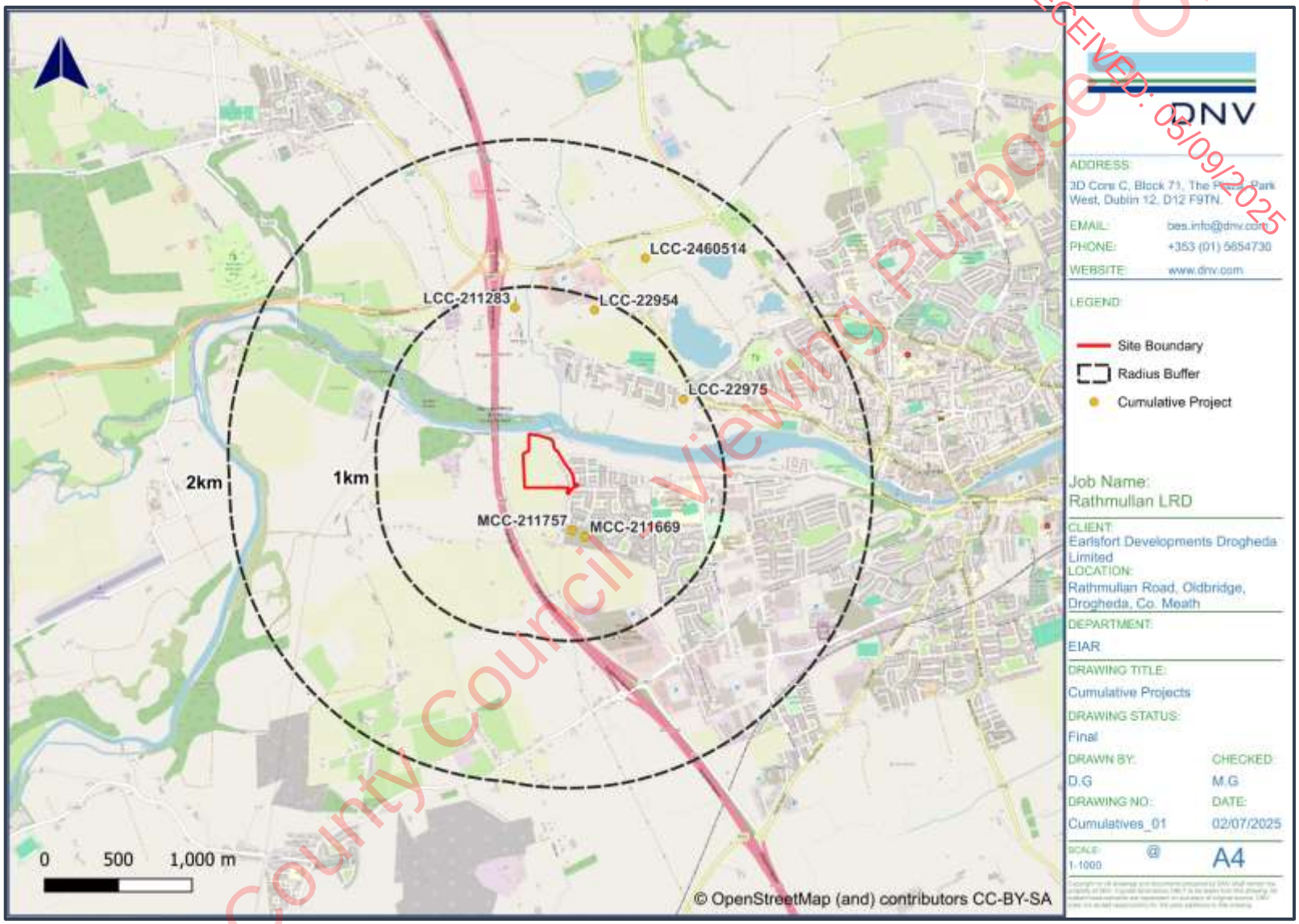



*Figure 10-17 Cumulative Projects*

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The cumulative residual effects of the overall Proposed Development considering both the construction and operational phases, are primarily related to noise. Construction activities such as demolition and substructure will inevitably introduce noise into the environment. However, recommended mitigation measures outlined in Section 10.6 of this chapter will ensure that construction noise effects will be imperceptible at NSLs. During the operational phase, a marginal increase in traffic associated with the development is expected to result in a slight rise in ambient noise levels of up to 1dBA NSLs. Operational external amenity area noise levels will not have an effect on NSLs.

Noise effects are anticipated to be negligible, localised, and compliant with relevant criteria, ensuring that they remain within acceptable levels. No other significant residual effects are expected following the implementation of appropriate mitigation measures during the construction phase.

### 10.5.4 "Do Nothing" Effect

In the absence of the Proposed Development, the existing noise environment would be expected to continue to be dominated by road traffic noise from the existing road networks. Due to continuing development in the area, road traffic flows would be expected to increase with a corresponding increase in road traffic noise.

## 10.6 Avoidance, Remedial & Mitigation Measures

### 10.6.1 Construction Phase

Best practice control measures for noise from construction sites are found within BS 5228 (2009 +A1 2014) part 1. Construction noise effects are expected to vary during the construction phase of the project, this effect will depend on the distance between the construction activities and noise sensitive receptor. The contractor will ensure that all best practice noise and control methods will be used, to ensure any negative noise effects at off-site noise sensitive locations are minimised.

The best practice measures set out in BS 5228 (2009) Part 1 includes guidance on several aspects of construction site mitigation measures, this includes the following:

- selection of quiet plant and equipment;
- noise control at source of the noise;
- screening, and;
- public liaison.

#### *10.6.1.1 General Recommendations*

This section of the report sets out noise mitigation options and detailed comment on each one specifically for this site.

#### *10.6.1.2 Selection of Plant and Equipment*

The noise effect of all plant and equipment should be assessed by an appropriately qualified acoustic consultant prior to selection of the plant for the project. Where an item of plant is identified as noisy with the potential to cause a negative noise effect it should be reviewed to check if there is an alternative quieter version of the same plant to undertake the same construction task.

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#### *10.6.1.3 Noise Control at Source*

Where replacing a noisy item of plant is not viable or practical, consideration should be given to control the noise emanating from that plant at source. This includes modifying the piece of plant or equipment to generate less noise and using dampening to control vibration induced noise or rattling. Example best practice mitigation measures to be considered are as follows:

- All plant and equipment to be switched off when idling.
- The use of white noise reversing alarms.
- Restriction on the dropping and loading of materials to less sensitive hours.
- The use of local screening for noisy activities or works with hand tools
- Not dropping materials onto hard surfaces and using rubber mats etc for the dropping of materials.
- Ensure all plant and equipment is well maintained and cleaned, all lubrication should be in line with manufacturers' guidelines.

#### *10.6.1.4 Screening*

Screening when used correctly can be an effective method of reducing the construction noise effect on the NSL's. The use of site hoarding and careful selection of areas for noise works, using buildings on the site, site offices and the building being constructed to screen noise from the works.

Examples of construction noise screening i.e. temporary acoustic barriers, are provided below:

- https://ventac.com/acoustic-products/noisebreak-acoustic-barrier/
- https://echobarrier.com/




*Figure 10-18: Temporary Construction Noise Barrier © Ventac*

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#### *10.6.1.5 Public Engagement*

It is recommended that a public liaison officer should be put forward by the contractor to liaise with the local residents on matters relating to noise. Residents should be informed of any noise works scheduled where there is the potential to generate high levels of construction noise or if specialist works etc need to be conducted out of the working hours. This person should also be the point of contact for all complaints and be responsible for reviewing the noise monitoring results and exceedances.

#### *10.6.1.6 Site Specific Recommendations*

Table 10-25 below outlines the recommended site-specific noise mitigation measures based on the attenuation for each construction phase.

*Table 10-25: Mitigation Required Based on the Construction Noise Predictions*

| Construction Stage | Recommended Noise Mitigation Measures |
|---|---|
| **Site Setup** | Erect a minimum 2.4m high site hoarding that blocks the line of sight between noise source and receiver.<br><br>Example construction for the site hording would be as follows:<br><br>A 2.4m high and 9mm plywood (4.5 kg/m2). Barrier must be solid and not contain gaps at the bottom or between adjacent panels<br><br>Local screening using the examples provided in Section 10.6.1.4<br>Screening with an absorptive lining should be considered for screening around hand tools. The absorptive lining is used to avoid reflections.<br>On this project 8 NSL's have been identified. It is recommended that a noise monitor should be placed on the boundary of the nearest noise sensitive locations closest to the works i.e. NSL1,5,6,7 and 8 in this case. |
| **Substructure** | Site hoarding to block line of sight. Local screening around noisy plant and equipment. |
| **Superstructure** | Local screening around saws/hammers where possible. Use external new building to screen noise from works where possible. |
| **External Finishes** | Local screening around hand tools. |

### 10.6.2 Operational Phase

Based on the results from the noise effect assessment, the predicted results show compliance with all relevant standards for noise effect at the surrounding noise sensitive receptors. Therefore, no mitigation measures are required for the operational phase of the development

### 10.6.3 "Worst Case" Scenario

This assessment assumes a worst-case scenario when assessing the construction and operational noise effects of the Proposed Development on the surrounding noise sensitive locations. The dominating noise source in the area is road traffic noise, even with the additional traffic from the construction and operational phases the predicted increase is likely less than 1dB(A) at each NSL.

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The operational phase of the Proposed Development will see an increase of traffic volumes on all link roads assessed, however due to the construction of the development, some NSL's will benefit from screening because of the overall Proposed Development and will in turn be predicted to achieve lower onset noise levels from traffic noise.

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## 10.7 Residual Effects

This section assesses potential significant environmental effects which remain after mitigation measures are implemented.

### 10.7.1 Construction Phase

As the construction phase is temporary, there will be no long-term/permanent noise effects on the surrounding area from construction noise. Section 10.6 of this Chapter outlines mitigation measures which if used in full will reduce the construction noise effect on the surrounding sensitive receptors.

### 10.7.2 Operational Phase

Operational noise sources include plant and equipment, external amenity spaces and traffic movements in and out of the site. Based on the noise effect assessment it is not likely that these sources will have a negative noise effect on the surrounding area.

## 10.8 Monitoring

### 10.8.1 Construction Phase

During the construction phase of the Proposed Development, construction noise monitoring should be undertaken to ensure compliance with the relevant guidance.

### 10.8.2 Operational Phase

Compliance with derived noise threshold limits outlined in Section 10.5.2.4 of this Chapter will ensure no monitoring is required during the operational phase of the Proposed Development.

## 10.9 Interactions

There is an interaction between noise and traffic through the generation of construction and operational stage traffic. Overall predictions are that there will be no significant noise effect generated during either the construction or operational phase of the Proposed Development site, in the context of existing traffic flows.

## 10.10 Difficulties Encountered When Compiling

The construction programme for the Proposed Development has not been finalised at this stage, construction programmes will only be known once a full site layout has been agreed and finalised, and a contractor has been appointed.

Further predictions and assessment may be required if significant changes in plant and equipment are proposed.

Note, apart from the standard issues mentioned, there were no additional challenges encountered.

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## 10.11 Conclusion

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Construction noise activities and traffic will not have a negative effect on nearby noise sensitive receptors. Noise mitigation measures are not required to reduce the effect of construction noise during any stages of construction of the Proposed Development. However, as good practice, noise mitigation measures have been outlined in Section 10.6.1.4 of this Chapter.

Operational traffic noise levels associated with the Proposed Development will not have a negative effect on nearby noise sensitive locations. It is generally accepted that it takes an approximate 3dBA increase in noise levels to be perceptible to the average person (Ref: Planning Policy Guidance Note 24 [PPG24 - Planning & Noise). Traffic flow increases associated with the Proposed Development will be significantly less than 25% and hence traffic noise level increases will be significantly less than 1dBA.

This report demonstrates that all dwellings will meet the specified internal noise level requirements provided the guidance in this report is followed. External amenity spaces have been provided in line with the guidance set out in ProPG. Based on this the development is in general compliance with the ProPG requirements.

Operational external mechanical plant and equipment associated with the Proposed Development has not yet been confirmed. In the absence of information regarding the operational plant at this planning stage the approach has been taken to determine suitable operational noise emission limits.

A BS4142 assessment can be undertaken at detailed design stage if details of any proposed mechanical plant and equipment is available. Despite the absence of certain information at this time, the assessment conducted is robust and can be confidently relied upon. Compliance with derived noise threshold limits for creche plant/equipment outlined in Table 10-16 of this Chapter will ensure no negative effect on nearby noise sensitive locations.

## 10.12 References

1. ISO 9613-1:1993Acoustics Attenuation of sound during propagation outdoors.
2. ISO 9613-2:1996 Acoustics Attenuation of sound during propagation outdoors
3. Part 2: General method of calculation
4. Part 1: Calculation of the absorption of sound by the atmosphere
5. EPA Guidelines on the Information to be contained in Environmental Impact Statements, (EPA, 2002);
6. EPA Advice Notes on Current Practice (in the preparation of Environmental Impact Statements), (EPA, 2003);
7. EPA Guidelines on the Information to be contained in Environmental Impact Assessment Reports Draft August 2017;
8. EPA Advice Notes for Preparing Environmental Impact Statements, (Draft, September 2015);
9. Environmental Protection Agency NG4: Guidance note for Noise: Licence Applications, Surveys and Assessments in Relation to Scheduled Activities

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10. Design Manual for Roads and Bridges (DMRB), Highways England Company Limited, Transport Scotland, The Welsh Government and The Department for Regional Development (Northern Ireland);
11. Good Practice Guidance for the Treatment of Noise during the Planning of National Road Schemes, Transport Infrastructure Ireland (TII), March 2014;
12. ISO 1996: 2017: Acoustics – Description, measurement and assessment of environmental noise (ISO, 2017);
13. Meath County Noise Action Plan 2024 -2028.
14. Institute of Acoustics, Chartered Institute of Environmental Health, & Association of Noise Consultants. (2017). ProPG: Planning & noise – New residential development.
15. BS 5228:2009+A1:2014 Code of practice for noise and vibration control on construction and open sites – Part 1: Noise;
16. BS 5228:2009+A1:2014 Code of practice for noise and vibration control on construction and open sites – Vibration; and
17. BS8233:2014 Guidance on sound insulation and noise reduction for buildings.

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# 11 LANDSCAPE AND VISUAL IMPACT

## 11.1 Introduction

The Landscape and Visual Impact Assessment (LVIA) prepared by CSR was informed by a desktop study and a survey of the site and receiving environment in November 2024. The assessment is in accordance with the methodology prescribed in the Guidelines for Landscape and Visual Impact Assessment, 3rd edition, 2013 (GLVIA) published by the UK Landscape Institute and the Institute for Environmental Management and Assessment.

The report identifies and discusses the likely landscape and visual effects in relation to the of the proposed residential development on lands at Rathmullan Road, Oldbridge, Drogheda, Co. Meath, on the landscape and visual amenity of the receiving environment. Throughout the report the new residential development is referred to as being the Proposed Development and the development lands as the Site.

The report should be read in conjunction with the supporting photomontages pack prepared by CS Consulting along with details of the design proposals of the Proposed Development found within the Landscape Masterplans and Sections (Drawing No. 18306B-2-100-103 & 18306B-2-201-203) and Landscape Strategy & Design Report (18306B-2-D01) (prepared by Cunnane Stratton Reynolds) and the architectural and engineering reports and plans. Together with other relevant EIAR chapters including Chapter 2 Project Description, Chapter 4: Population & Human Health, Chapter 5: Biodiversity, Chapter 6: Land & Soil, Chapter 12: Archaeology and Cultural Heritage and Chapter 13: Material Assets - Traffic & Transport.

### 11.1.1 Quality Assurance and Competency of Experts

This Landscape and Visual Impact Assessment was carried out by chartered landscape architect Ronan Finnegan, BSc, PG Dip, CMLI of Cunnane Stratton Reynolds. He has over thirteen years' experience as a landscape architect which has involved undertaking Landscape and Visual Impact Assessments (LVIA) for a broad range of development types including large residential, infrastructure and renewable energy projects located across Ireland and the UK. Oversight of the LVIA chapter was provided by Declan O'Leary, MILI, Director of Cunnane Stratton Reynolds, with over 30 years' experience

## 11.2 Study Methodology

Ireland is a signatory to the European Landscape Convention (ELC). The ELC defines landscape as 'an area, as perceived by people, whose character is the result of the action and interaction of natural and/or human factors' (Council of Europe, 2000). This definition is important in that it expands beyond the idea that landscape is only a matter of aesthetics and visual amenity. It encourages a focus on landscape as a resource in its own right - a shared resource providing a complex range of cultural, environmental, and economic benefits to individuals and society.

It is also important to note that this definition of landscape applies not only to all types of rural landscape, marine and coastal landscapes (seascapes) but also to the landscape of villages, towns and cities (Section 2.5 of the Guidelines for Landscape and Visual Impact Assessment 2013).

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### 11.2.1 Guidance

*The Guidelines for Landscape and Visual Impact Assessment* 2013 (abbreviated to 'GLVIA (2013)' hereafter) notes that as a cultural resource, the landscape functions as the setting for our day-to-day lives, also providing opportunities for recreational and aesthetic enjoyment and inspiration. It contributes to the sense of place experienced by individuals and communities and provides a link to the past as a record of historic socio-economic and environmental conditions. As an environmental resource, the landscape provides habitat for fauna and flora. It receives, stores, conveys, and cleans water, and vegetation in the landscape stores carbon and produces oxygen. As an economic resource, the landscape provides the raw materials and space for the production of food, materials (e.g. timber, aggregates) and energy (e.g. carbon-based fuels, wind, solar), living space and for recreation and tourism activities.

The GLVIA (2013) notes that landscape is not unchanging. Many different pressures have progressively altered familiar landscapes over time and will continue to do so in the future, creating new landscapes. For example, within the receiving environment, the environs of the Development have altered over the last thousand years, from wilderness to agriculture and settlement or townscape.

Many of the drivers for change arise from the requirement for development to meet the needs of a growing population and economy. The concept of sustainable development recognises that change must and will occur to meet the needs of the present, but that it should not compromise the ability of future generations to meet their needs. This involves finding an appropriate balance between economic, social and environmental forces and values.

The reversibility of change is also described as an important consideration. If change must occur to meet a current need, can it be reversed to return the resource (in this case, the landscape) to its previous state to allow for development or management for future needs?

Climate change is one of the major factors likely to bring about future change in the landscape, and it is accepted to be the most serious long-term threat to the natural environment, as well as economic activity (particularly primary production) and society. The need for climate change mitigation and adaptation, which includes the management of water and more extreme weather and rainfall patterns, is part of this.

#### *11.2.1.1 Key Guidance Documents*

Landscape and Visual Impact Assessment (LVIA) is a tool used to identify and assess the significance of and the effects of change resulting from development on both the landscape as an environmental resource in its own right and on people's views and visual amenity.

The methodology for assessment of the landscape and visual effects is informed by the following key guidance documents, namely:

- Guidelines for Landscape and Visual Impact Assessment, 3rd Edition Landscape Institute and the Institute of Environmental Management and Assessment (2013) (hereafter referred to as the GLVIA 2013)
- Notes and Clarifications on aspects of the GLVIA3, Landscape Institute, (2024).
- Guidelines on the Information to be Contained in Environmental Impact Assessment Report. (EPA, 2022).

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- Environmental Impact Assessment of Projects. Guidance on the preparation of the Environmental Impact Assessment Report. (Directive 2011/92/EU as amended). European Commission (2017).

The above GLVIA guidance is authored by the Landscape Institute in the UK, which contains a network of members in the UK, Ireland and internationally. The guidance was prepared within the parameters of relevant EU directives at the time and is updated, where necessary, by Landscape Institute bulletins online. The GLIVA 2013 is used internationally and is the industry standard for LVIA in Ireland.

The EPA guidance (2022) refers to the use of topic specific guidance and specifically references the GLVIA 2013 in relation to professional judgement. It recognises (at para 3.72) that:

*"Some uncertainty is unavoidable in EIA, especially about matters that involve an element of judgement, such as assigning a level of significance to an effect. Such judgements should be explicit and substantiated rather than presented as objective fact. This is best done using agreed referable approaches, e.g. the Guidelines on Landscape and Visual Impacts Assessment provide guidance on what constitutes a severe visual effect".*

References are also made to the *'Landscape and Landscape Assessment – Consultation Draft of Guidelines for Planning Authorities'* document, published in 2000 by the Department of Environment, Heritage and Local Government.

#### *11.2.1.2 Policy Documents*

Policy documents referred to entail:

- The Consolidated Meath County Development Plan 2021-2027(incl. variations 1,2,3) and associated relevant documents (including the Meath Landscape Character Assessment).
- The Consolidated Louth County Development Plan 2021-2027 (incl. variations 1,2) and associated relevant documents (including the Louth Landscape Character Assessment).

### 11.2.2 Landscape and Visual Assessment Process

The GLVIA 2013 outlines the assessment process, which combines judgements on the sensitivity of the resource, and the magnitude of the change as a result of the Development. These are then combined to reach an assessment of the significance of the effect.

Another key distinction to make is that in the GLVIA methodology, a distinction is made between landscape effects and the visual effects of a development.

'Landscape' results from the interplay between the physical, natural and cultural components of our surroundings. Different combinations of these elements and their spatial distribution create distinctive character of landscape in different places. 'Landscape character assessment' is the method used in LVIA to describe landscape, and by which to understand the potential effects of a development on the landscape as 'a resource'. Character is not just about the physical elements and features that make up a landscape, but also embraces the aesthetic, perceptual and experiential aspects of landscape that make a place distinctive.

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Views and 'visual amenity' refer to the interrelationship between people and the landscape. The GLVIA 2013 prescribes that effects on views and visual amenity should be assessed separately from landscape, although the two topics are inherently linked. Visual assessment is concerned with changes that arise in the composition of available views, the response of people to these changes and the overall effects on the area's visual amenity.

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#### *11.2.2.1 Establishment of Baseline*

The process set out in the GLVIA 2013 and in the EPA (2022), involves the preparation of the baseline or receiving environment characteristics. This includes two stages, which are a desk based study and site visit/field work. These allow the assessor to establish the existing receiving environment and key landscape and visual characteristics and their sensitivities.

The desk-based study included:

- Review of preliminary proposals and identification of preliminary study area
- Review of the current Meath County and Louth County Development Plans 2021-2027 as revised, and any other supplementary planning guidance as appropriate, to identify relevant national and local designations and polices.
- Review of designations such as scenic routes, protected views and other landscape designations including any Landscape Character Assessments, International heritage designations such as UNESCO World Heritage Site of Brun na Boijnne, other heritage designations such as Architectural Conservation Areas, Archaeological Sites and Monuments and including sites that are of importance to the Battle of the Boyne, ecological designations such as the SAC, pNHA and SPA in relation to the River Boyne and others that would also be relevant here
- A review of planning history of the proposed site lands and of other relevant developments within the study area extents of Meath and Louth County council areas.
- Mapping information consulted included aerial imagery, OSI Discovery series mapping, historic (6-inch and 25 inch) mapping and CORINE Landcover Maps (2018).

Site Visit/ Field Work included:

- A site visit was subsequently carried out by CSR in November 2024 to review and confirm the findings of the desk-based study and earlier site visit in 2022. The site visit provided an updated and more detailed description of the landscape and visual character of the study area.
- The site visit included visiting the site and driving around the local area, during which a number of viewpoints were selected by CSR, for resulting photomontages. The viewpoints selections were based on both the desk study and site visit and include a range of representative views of different visual receptors types, sensitivities directions/distances located through the study area, with their selection detailed further in Section 11.5.2.
- The existing baseline views were all later captured/photographed on site by CS Consulting in May 2024, along with each location's accurate X,Y & Z data.

Based on both the desk study and site visit, the assessor identifies landscape and visual receptors and their relative sensitivity.

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#### *11.2.2.2 Assessment of Effects:*

Once the Baseline is established, and the development drawings and descriptions reviewed, the assessment process is commenced, as outlined in **Section 11.5**.

Use of 'Impact' and 'Effect':

Section 1.15 and 1.16 of the GLVIA 2013 (referring to the EIA Directive), advises that the terms 'impact' and effect' should be clearly distinguished and consistently used in the preparation of an LVIA.

*'Impact'* is defined as the action being taken. In the case of the Proposed Development, the impact would include the construction of the proposed buildings and associated boundaries and external areas, including landscaped amenity areas and access routes through the site.

*'Effect'* is defined as the change or changes resulting from those actions, e.g. a change in landscape character, or changes to the composition, character and quality of views in the receiving environment. This report focusses on these effects.

#### *11.2.2.3 Methodology for Landscape Assessment*

In **Section 11.5** of this chapter, the landscape effects of the Proposed Development are assessed. The nature and scale of changes to the landscape elements and characteristics are identified, and the consequential effect on landscape character and value are discussed. Trends of change in the landscape are taken into account. The assessment of the significance of the effects takes account of the sensitivity of the landscape resource and the magnitude of change to the landscape, which may result from the Proposed Development.

Definitions and descriptions of sensitivity, magnitude of change and quality and longevity of effects are derived from the GLVIA 2013. The GLVIA 2013 does not set out specific definitions of descriptions used but contains widely used principles and case studies / examples that are intended to inform a professional's methodology, supported by their experience and judgements in relation to landscape and landscape change. These descriptions expand and complement the EPA guidelines as intended, in relation to topic-specific guidance.

<u>Sensitivity of the Landscape Resource</u>

Sensitivity is a combination of Landscape Value and Landscape Sensitivity:

- Landscape values can be identified by the presence of landscape designations or policies, which indicate particular values, either on a national or local level. In addition, a number of criteria are used to assess the value of a landscape. These are described further below.
- Landscape susceptibility is defined in the GLVIA as, "*the ability of the landscape receptor to accommodate the Development without undue consequences for the maintenance of the baseline scenario and/or the achievement of landscape planning policies and strategies*." Susceptibility is a function of its land use, landscape patterns and scale, visual enclosure and distribution of visual receptors, scope for mitigation, and the value placed on the landscape. Susceptibility also relates to the type of development – a landscape may be highly susceptible to certain types of development but have a low susceptibility to other types of development.

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It includes consideration of landscape values as well as the susceptibility of the landscape to change.

With regard to landscape effects, a development has the potential to improve the environment as well as damage it. In certain situations, there might be policy encouraging a type of change in the landscape, and a particular development may achieve this.

Landscape Sensitivity ranges from Negligible to Very High as outlined in **Table 11-1**.

*Table 11-1: Categories of Landscape Sensitivity*

| Sensitivity | Description |
|---|---|
| **Very High** | Areas where the landscape exhibits a very strong, positive character with valued elements, features and characteristics that combine to give an experience of unity, richness and harmony. The character of the landscape is such that its capacity for accommodating change in the form of development is very low. These attributes are recognised in landscape policy or designations as being of national or international value and the principal management objective for the area is protection of the existing character from change. |
| **High** | Areas where the landscape exhibits strong, positive character with valued elements, features and characteristics. The character of the landscape is such that it has limited/low capacity for accommodating change in the form of development. These attributes are recognised in landscape policy or designations as being of national, regional or county value and the principal management objective for the area is conservation of the existing character. |
| **Medium** | Areas where the landscape has certain valued elements, features or characteristics but where the character is mixed or not particularly strong. The character of the landscape is such that there is some capacity for change in the form of development. These areas may be recognised in landscape policy at local or county level and the principal management objective may be to consolidate landscape character or facilitate appropriate, necessary change. |
| **Low** | Areas where the landscape has few valued elements, features or characteristics and the character is weak. The character of the landscape is such that it has capacity for change; where development would make no significant change or would make a positive change. Such landscapes are generally unrecognised in policy and where the principal management objective is to facilitate change through development, repair, restoration or enhancement. |
| **Negligible** | Areas where the landscape exhibits negative character, with no valued elements, features or characteristics. The character of the landscape is such that its capacity for accommodating change is high; where development would make no significant change or would make a positive change. Such landscapes include derelict industrial lands or extraction sites, as well as sites or areas that are designated for a particular type of development. The principal management objective for the area is to facilitate change in the landscape through Development, repair or restoration. |

*Magnitude of Landscape Change:*

The magnitude of change is a factor of the scale, extent and degree of change imposed on the landscape with reference to its key elements, features and characteristics (also known as 'landscape receptors'). Five categories are used to classify magnitude of landscape change.

For the purpose of assessment, five categories are used to classify the landscape sensitivity of the receiving environment, from Very High sensitivity to Negligible. (These categories are defined in **Table 11.2**, below):

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*Table 11-2: Magnitude of Landscape Change*

| Magnitude of Change | Description |
|---|---|
| **Very High** | Change that is large in extent, resulting in the loss of or major alteration to key elements, features or characteristics of the landscape and/or introduction of large elements considered totally uncharacteristic in the context. Such development results in fundamental change in the character of the landscape. |
| **High** | Change that is moderate to large in extent, resulting in alteration or compromise to key elements, features or characteristics, and/or introduction of large elements considered uncharacteristic in the context. Such development results in a moderate to large change to the character of the landscape. |
| **Medium** | Change that is moderate in extent, resulting in partial loss or alteration to key elements, features or characteristics of the landscape, and/or introduction of elements that may be prominent but not necessarily uncharacteristic in the context. Such development results in moderate change to the character of the landscape |
| **Low** | Change that is limited in extent, resulting in minor alteration to key elements, features or characteristics of the landscape, and/or introduction of elements that are not uncharacteristic in the context. Such development results in minor change to the character of the landscape. |
| **Negligible** | Change that is very limited in extent, resulting in no alteration to key elements, features or characteristics of the landscape, and/or introduction of elements that are characteristic in the context. Such development results in minimal change to the character of the landscape. |

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#### *11.2.2.4 Methodology for Visual Assessment*

In **Section 11.5** of this chapter, the visual effects of the Proposed Development are assessed. Visual assessment considers the sensitivity of the viewers (i.e. groups of people) and the magnitude of the changes to the composition and character of views. The assessment is made for a number of viewpoints selected to represent the range of visual receptors in the receiving environment. The significance of the visual effects experienced at these locations is assessed by measuring the visual receptor sensitivity against the magnitude of change to the view resulting from the Proposed Development.

*Sensitivity of the Visual Receptor*

Visual receptor sensitivity is a function of two main considerations:

- *Susceptibility of the visual receptor to change.* This depends on the occupation or activity of the people experiencing the view, and the extent to which their attention or interest is focused on the views or visual amenity they experience at that location.

Visual receptors most susceptible to change include residents at home, people engaged in outdoor recreation focused on the landscape (e.g. trail users), and visitors to heritage or other attractions and places of community congregation where the setting contributes to the experience.

Visual receptors less susceptible to change include travellers on road, rail and other transport routes (unless on recognised scenic routes which would be more susceptible), people engaged in outdoor recreation or sports where the surrounding landscape does not influence the experience, and people in their place of work or shopping where the setting does not influence their experience.

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- Value attached to the view. This depends to a large extent on the subjective opinion of the visual receptor but also on factors such as policy and designations (e.g. scenic routes, protected views), or the view or setting being associated with a heritage asset, visitor attraction or having some other cultural status (e.g. by appearing in arts).

For the purpose of assessment, five categories are used to classify visual receptor sensitivity. These categories range from Very High to Negligible and are described in **Table 11-3**.

*Table 11-3: Categories of Visual Receptor Sensitivity*

| Sensitivity | Description |
|---|---|
| **Very High** | Viewers at iconic viewpoints - towards or from a landscape feature or area - that are recognised in policy or otherwise regarded as being of very high value or national value. This may also include residential viewers whose primary view is of very high value. |
| **High** | Viewers at viewpoints that are recognised in policy or otherwise designated as being of high value, or viewpoints that are highly valued by people that experience them regularly (such as views from houses or outdoor recreation features) and are valued by the local community. This would include tourist attractions, and heritage features of regional or county value, and viewers travelling on scenic routes. |
| **Medium** | Viewers at viewpoints representing people travelling at slow or moderate speed through or past the affected landscape in cars or on public transport, where they are partly but not entirely focused on the landscape, or where the landscape has some valued views. The views are generally not designated, but which include panoramic views or views judged to be of some scenic quality, which demonstrate some sense of naturalness, tranquillity or some rare element in the view. |
| **Low** | Viewers at viewpoints reflecting people involved in activities not focused on the landscape e.g. people at their place of work or engaged in similar activities such as shopping, etc. The view may present an attractive backdrop to these activities but there is no evidence that the view is valued, or that it is regarded as an important element of these activities. Viewers travelling at high speeds (e.g. motorways) may also be considered of low susceptibility. |
| **Negligible** | Viewpoints reflecting people involved in activities not focused on the landscape e.g. people at their place of work or engaged in similar activities, such as shopping, where the view has no relevance or is of poor quality and not valued. |

*Magnitude of Change to the View*

Classification of the magnitude of change takes into account the size or scale of the intrusion of the Proposed Development into the view, relative to the other elements and features in the composition (i.e. its relative visual dominance), the degree to which it contrasts or integrates with the other elements and the general character of the view, and the way in which the change will be experienced (e.g. in full view, partial or peripheral, or glimpses). It also takes into account the geographical extent of the change, the duration and the reversibility of the visual effects.

Five categories are used to classify magnitude of change to a view. These range from Very High to Negligible and are defined in **Table 11-.4**:

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*Table 11-4: Magnitude of Visual Change*

| Magnitude of Change | Description |
|---|---|
| **Very High** | Full or extensive intrusion of the development in the view, or partial intrusion that obstructs highly valued features or characteristics, or the introduction of elements that are completely out of character in the context, to the extent that the Development becomes dominant in the composition and defines the character of the view and the visual amenity. |
| **High** | Extensive intrusion of the development in the view, or partial intrusion that obstructs valued features, or introduction of elements that may be considered uncharacteristic in the context, to the extent that the Development becomes co-dominant with other elements in the composition and affects the character of the view and the visual amenity. |
| **Medium** | Partial intrusion of the development in the view, or introduction of elements that may be prominent but not necessarily uncharacteristic in the context, resulting in change to the composition but not necessarily the character of the view or the visual amenity. |
| **Low** | Minor intrusion of the development into the view, or introduction of elements that are not uncharacteristic in the context, resulting in minor alteration to the composition and character of the view but no change to visual amenity. |
| **Negligible** | Barely discernible intrusion of the development into the view, or introduction of elements that are characteristic in the context, resulting in slight change to the composition of the view and no change in visual amenity. |

In this case, a number of tools are used to assist in the assessment of visual effects. These include photomontages, which are produced from selected viewpoints. Initial viewpoints for photomontages are selected during the desk study with the exact location confirmed in the field during the site visit. The completed photomontages are also used to assist in the assessment of visual effects. The set of photomontages which accompany this submission are produced by CS Consulting in accordance with Landscape Institute Technical Guidance Note on Visual Representation of Development Proposals, Landscape Institute (2019).

*Significance of Effects*

In order to classify the significance of landscape and visual effects, the predicted magnitude of change is measured against the sensitivity of the landscape/viewpoint. The definitions used by the EPA (2022) provide a useful scale to describe the significance of the effects.

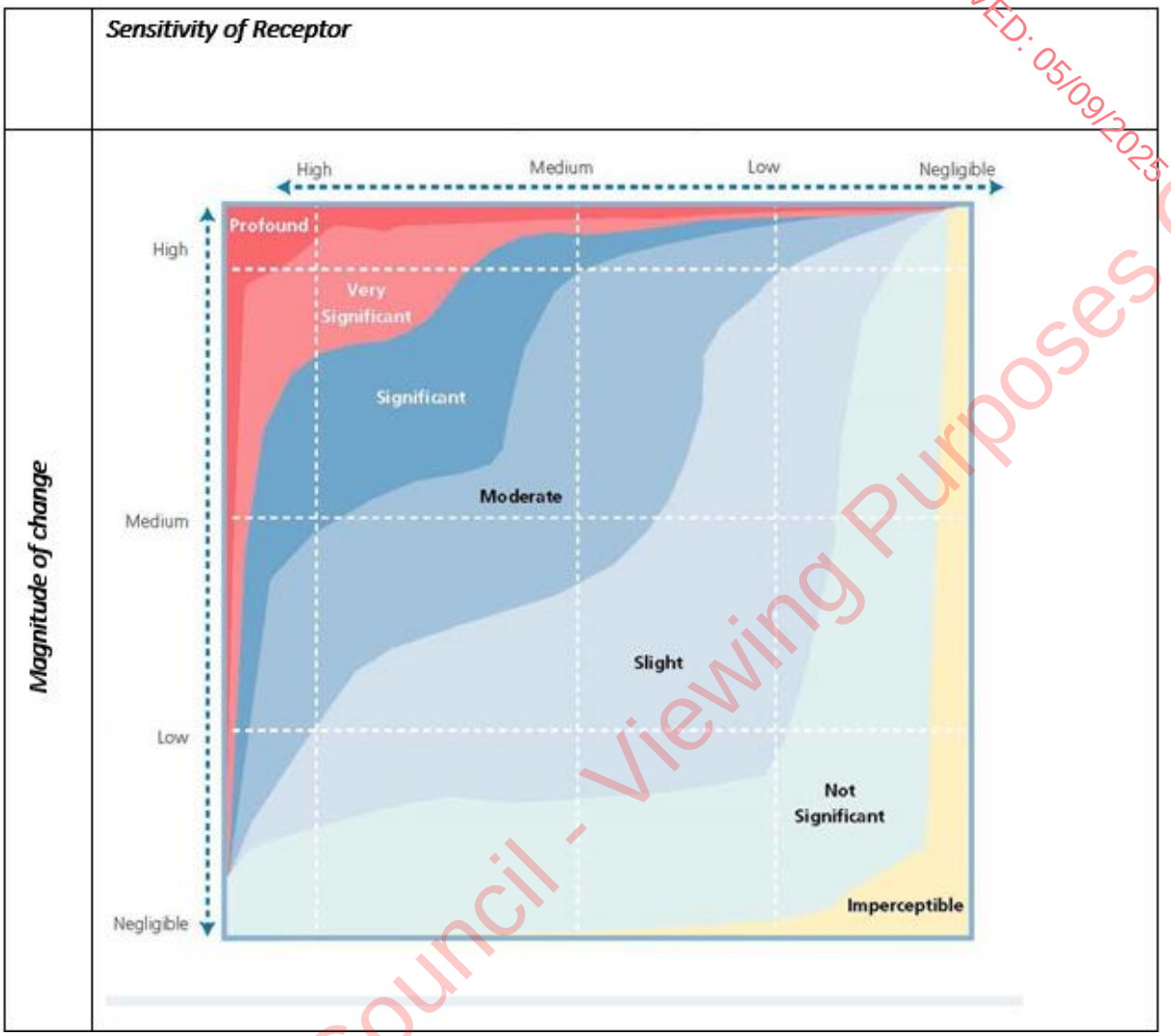
There are seven classifications of significance, namely: (1) imperceptible, (2) not significant, (3) slight, (4) moderate, (5) significant, (6) very significant, (7) profound.

The relationship between the magnitude of change and sensitivity of the receptor with the varying classifications of significance is illustrated on the below extract from the EPA (2022) Guidelines (with labels amended and simplified based on GLVIA 2013 (guidance):

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*Table 11-5: Significance of Effect (Source: EPA 2022)*




*Note: This graphic is a guideline only, and an element of professional judgment is also applied. The assessor also uses professional judgement informed by their expertise, experience and common sense, to arrive at a classification of significance that is reasonable and justifiable.*

The GLVIA 3rd Edition recognises (at para 2.23) that:

*"professional judgement is a very important part of LVIA. While there is scope for quantitative measurement of some relatively objective matters, much of the assessment must rely on qualitative judgements."*

*Quality and Timescale*

In accordance with the EPA (2022), the predicted impacts are also classified as beneficial, neutral, or adverse. This is not an absolute exercise; in particular, visual receptors' attitudes to development, and thus their response to the impact of a development, will vary. However, the methodology applied is designed to provide robust justification for the conclusions drawn. These qualitative definitions are included in **Table 11-6** below

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*Table 11-6: Quality of Effect (Source: CSR based on GLVIA 2013)*

| Definition of Quality of Effects | |
|---|---|
| **Adverse/negative** | Scheme at variance with landform, scale, pattern. Would degrade, diminish or destroy the integrity of valued features, elements or their setting or cause the quality of the landscape (townscape) view to be diminished. |
| **Neutral** | Scheme complements (or does not detract from) the scale, landform and pattern of the landscape (townscape)/view and maintains landscape quality |
| **Beneficial/positive** | Improves landscape (townscape)/view quality and character, fits with the scale, landform and pattern and enables the restoration of valued characteristic features or repairs / removes damage caused by existing land uses. |

Impacts/effects are also categorised according to their longevity or timescale as in **Table 11-7** below.

*Table 11-7: Duration of Effect (Source: EPA)*

| Definition of Duration of Effects | |
|---|---|
| Duration | **Description** |
| **Temporary** | Effects lasting one year or less |
| **Short Term** | Effects lasting one to seven years |
| **Medium Term** | Effects lasting seven to fifteen years |
| **Long Term** | Effects lasting fifteen to sixty years |
| **Permanent** | Effects lasting over sixty years |

## 11.3 The Existing and Receiving Environment (Baseline Situation)

### 11.3.1 Study Area

According to Section 5.2 of the Guidelines for Landscape and Visual Impact Assessment (3rd Edition 2013):

*"The study area should include the site itself and the full extent of the wider landscape around it, which the Proposed Development may influence in a significant manner."*

The extent of a study area for an LVIA mainly derives from the nature of the site and wider urban and rural landscapes, in tandem with the specifics of the proposed development. In this instance, owing to the nature of the Proposed Development, there is a notably low capacity for significant impacts to arise beyond approx.1km from the site while the study area has been extended out to approx. 2km to allow for consideration of views from important receptors e.g. the historically important Oldbridge House. However, an emphasis will be placed on receptors within approx. 300m of the site, as these are more/most likely to have the capacity to experience significant visual effects.

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### 11.3.2 Planning Policy Context

The following statutory plans are referenced in this section, owing to their relevance to the site location and its Proposed Development:

- Consolidated Meath County Development Plan 2021-2027 (incl. Variations 1,2&3); and
- Consolidated Louth County Development Plan 2021-2027 (incl. Variations 1 &2)

Further details of the overall planning context relevant to this application can be found within the supporting Planning Report . The below provides an outline of the planning context in relation to the site with particular emphasis on those policies and objectives found in both County Development Plan and National planning guidance with relevance to landscape and visual matters.

#### *11.3.2.1 Consolidated Meath County Development Plan 2021-2027 (incl. Variations 1, 2 & 3).*

The Consolidated Meath County Development Plan (referred here as MCDP) contains a range of policies relevant to establishing the landscape and visual values and sensitivities for the site and site environs. These are set out below.

Core Strategy and Strategic Goals

The county's core strategy includes the following relevant aims which outline the need to facilitate sustainable, compact development and protect and support environmental resources;

- *CS POL 1 To promote and facilitate the development of sustainable communities in the County by managing the level of growth in each settlement to ensure future growth is in accordance with the Core Strategy and County Settlement Hierarchy in order to deliver compact urban areas and sustainable rural communities.*
- *CS OBJ 1 To secure the implementation of the Core Strategy and Settlement Strategy, in so far as practicable, by directing growth towards designated settlements, subject to the availability of infrastructure and services.*
- *CS OBJ 2 To ensure that sufficient zoned lands are available to satisfy the housing requirements of the County in designated settlements over the lifetime of the Plan.*
- *CS OBJ 8 The existing Southern Environs of Drogheda Local Area Plan 2009 (The LAP) shall remain the statutory plan for the Southern Environs of Drogheda until such a time as it is replaced with a Joint Urban Plan for Drogheda in conjunction with Louth County Council having regard to the requirements of the Report of the Drogheda Boundary Review Committee (February 2017), the National Planning Framework, and the Eastern and Midland Region Regional Spatial and Economic Strategy. This plan shall be read together with the County Development Plan 2020-2026. The County Development Plan 2020-2026 shall take precedence if a conflict arises between the Plans and the conflicting provision of the LAP shall cease to have effect.*
- *CS OBJ 12 To ensure that all settlements, in as far as practicable, develop in a self-sufficient manner with population growth occurring in tandem with the provision of physical and social infrastructure.*

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Drogheda is identified within the County Settlement Hierarchy as one of the county's "Regional Growth Centres", which are described as being "*large towns with a high level of self-sustaining employment and services that act as regional economic drivers and play a significant role for a wide catchment area*."

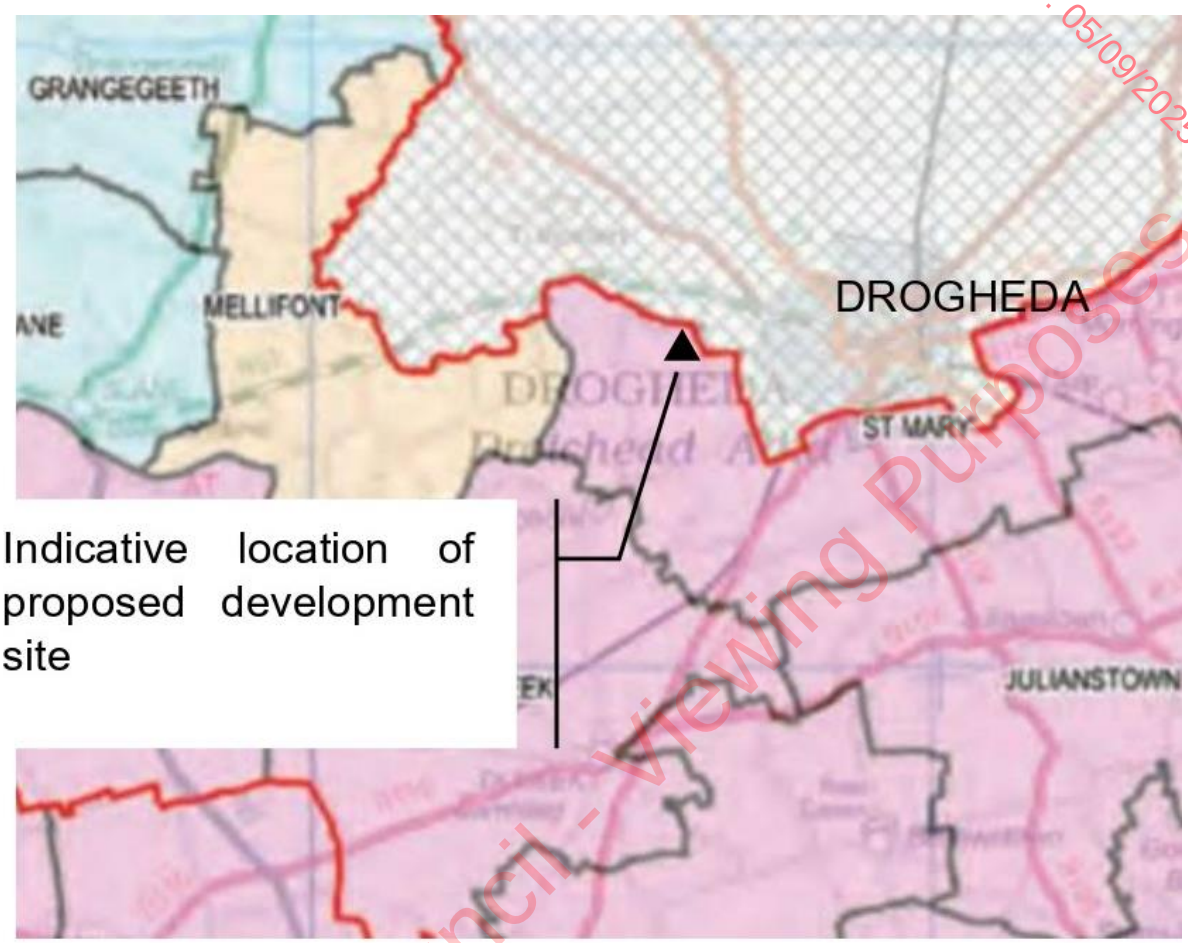



*Figure 11-1 Excerpt from MCDP - Map 9.1 Rural Area Types Development Pressure*

Policy relating to Rural Areas Under Strong Urban Influence include RD POL 2, "*to facilitate the housing requirements of the rural community as identified while directing urban generated housing to areas zoned for new housing development in towns and villages in the area of the development plan" and RD POL 3* "*To protect areas falling within the environs of urban centres in this Area Type from urban generated and unsightly ribbon development and to maintain the identity of these urban centres*."

Land Use Zoning

Proposed Development Site

- A2 New residential; "*To provide for new residential communities with ancillary community facilities, neighbourhood facilities and employment uses as considered appropriate for the status of the centre in the Settlement Hierarchy*".
- F1 Open Space; "*To provide for and improve open spaces for active and passive recreational amenities*".

*Other land uses*

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- A1 Existing Residential; *"To protect and enhance the amenity of developed residential communities"*.
- F1 Open Space; *"To provide for and improve open spaces for active and passive recreational amenities"*.

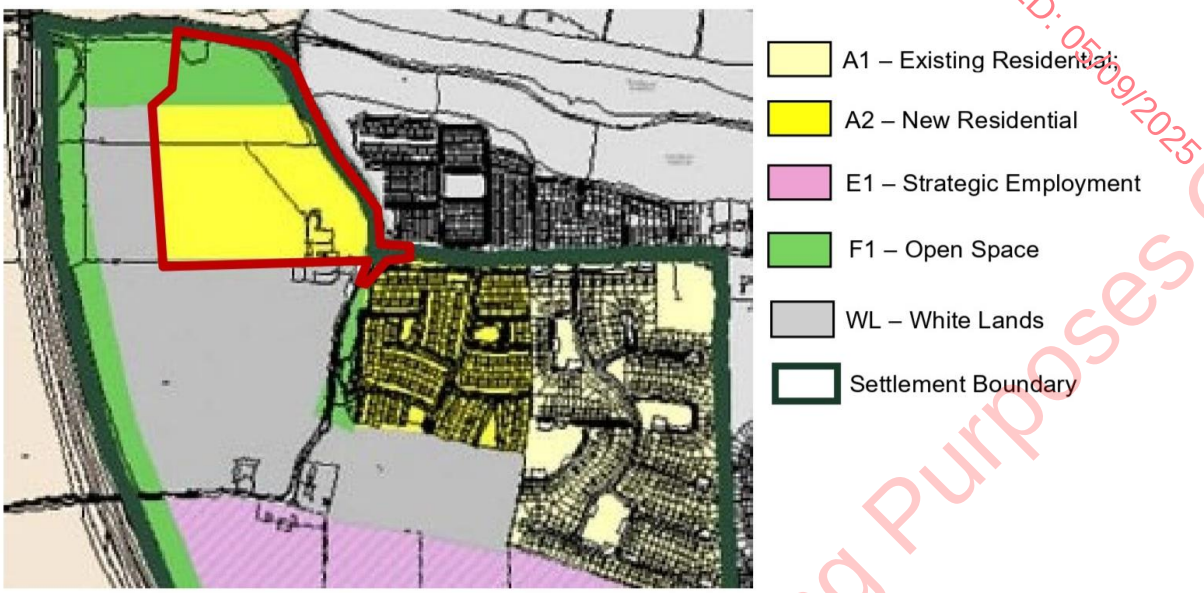



*Figure 11-2 Excerpt from Meath CCDP Map for Drogheda Southern Environs (Sheet 35a as amended)*

Housing

The Meath County Development Plan states that "*the primary aim of the Planning Authority in relation to residential development is through promoting consolidation and compact development in an attractive setting that provides a suitable mix of housing and supporting amenities and ensuring co-ordinated investment in infrastructure that will support economic competitiveness and create a high-quality living and working environment."* In relation to the assessment of the impact of residential development on landscape and visual amenity, the following policies are relevant;

- *SH POL 2: To promote the consolidation of existing settlements and the creation of compact urban forms through the utilisation of infill and brownfield lands in preference to edge of centre locations.*
- *SH POL 3: To support the creation of healthy and sustainable communities that encourages and facilitates walking and cycling and general physical activity through the implementation of best practices in urban design that promotes permeability and interconnecting spaces*
- *SH POL 7: To encourage and foster the creation of attractive, mixed use, sustainable communities that include a suitable mix of housing types and tenures with supporting facilities, amenities, and services that meet the needs of the entire community and accord with the principles of universal design, in so far as practicable.*
- *SH POL 8: To support the creation of attractive residential developments with a range of housing options and appropriate provision of functional public and private open space that is consistent with the standards and principles set out in the Sustainable Residential Development and Compact Settlements Guidelines (2024), the associated Urban Design Manual and any subsequent Guidelines.*

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- *SH POL 9: To promote higher residential densities in appropriate locations and in particular close to town centres and along public transport corridors, in accordance with the Sustainable Residential Development and Compact Settlement Guidelines (2024)*
- *SH POL 10: To require that applications for residential development take an integrated and balanced approach to movement, place making, and streetscape design in accordance with the requirements of the Design Manual for Urban Roads and Streets, DTTS and DECLG (2013 and updated in 2019).*
- *SH POL 12: To promote innovation in architectural design that delivers buildings of a high-quality that positively contributes to the built environment and local streetscape.*

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Cultural and Natural Heritage Assets

MCDP outlines the wealth of cultural and natural assets found in County Meath including the UNESCO World Heritage Site of Brú na Bóinne. Policy exists to protect cultural and natural assets. Three types of cultural designations are relevant to this site;

- The World Heritage Site (WHS) of Brú na Bóinne,
- Architectural Conservation Areas,
- Archaeological Sites and Monuments.

UNESCO World Heritage Site of Brú na Bóinne

The World Heritage Site (WHS) on the Bend of the Boyne or Brú na Bóinne, refers to the area within the bend of the river Boyne around Newgrange, Knowth and Dowth. The core World Heritage Site Area is 780ha and is mapped below in **Figure 11-3**. The centre of the WHS is located approximately 4km west of the site. The shortest distance between the site and the WHS Core Area is approximately 1.64km.

The 2500ha. buffer zone around this WHS Core Area represents carefully mapped views in and out of the site and contains many important heritage sites and features itself. The site is located approximately 130m west of the western boundary of the World Heritage Site Buffer Zone over the M1 motorway.

HER POL 6 states the policy "*To protect the Outstanding Universal Value of the UNESCO World Heritage Site of Brú na Bóinne in accordance with the relevant guidelines and national legislation, so that its integrity, authenticity and significance are not adversely affected by inappropriate development or change.*"

The WHS and Brú na Bóinne Management Plan (Appendix 8 of the Development Plan) note that some views from within the buffer zone have been affected by developments such as the M1, the Mary McAleese Bridge, the addition of a third chimney and other structures to the cement factory near Dunleek, an incinerator stack near Carranstown and a housing development. The management plan notes, "the ambiance of the ritual centre is vulnerable to such disturbances which could potentially threaten the integrity of the property"

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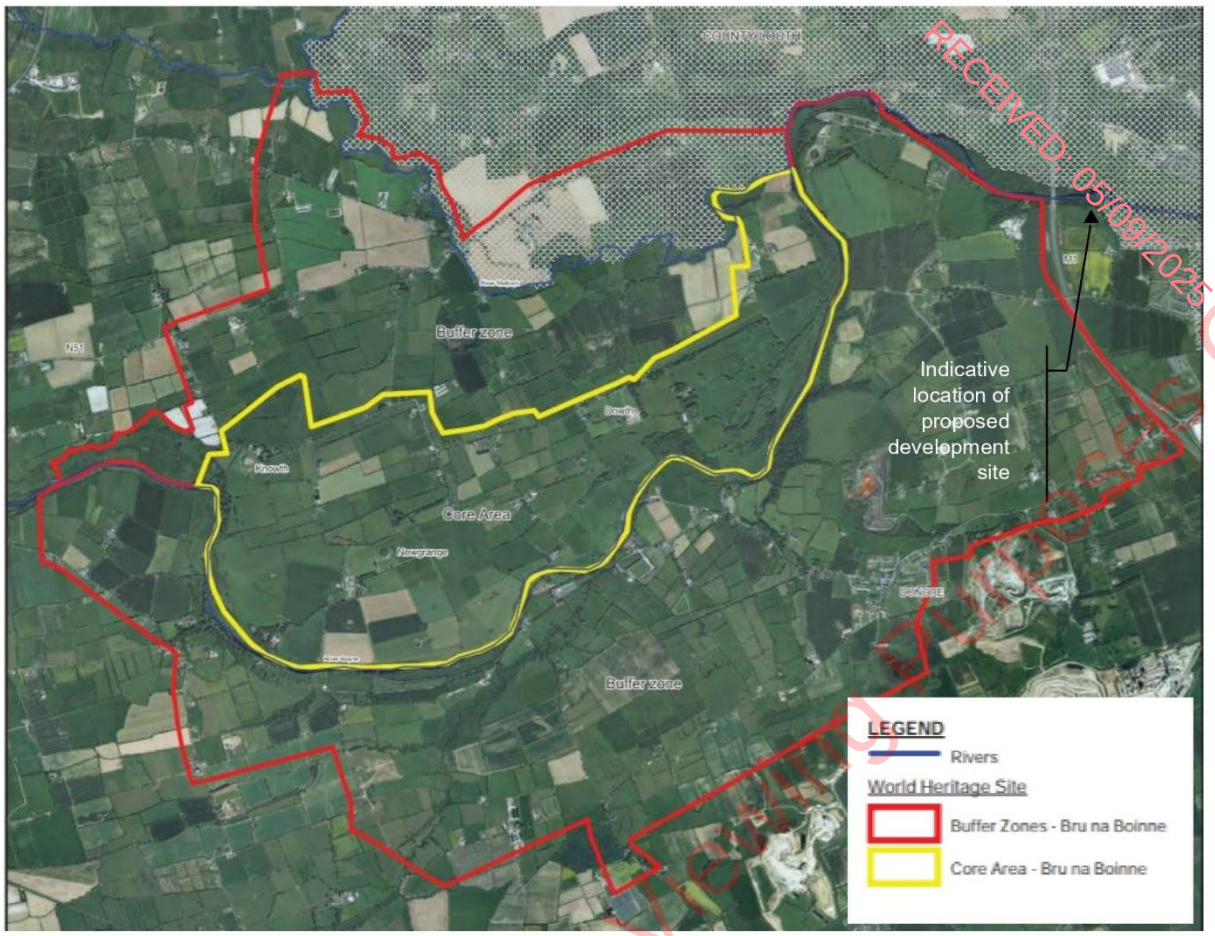



*Figure 11-3 Excerpt from MCDP - Brú na Bóinne World Heritage Site Map 8.1*

Archaeological Sites and Monuments

Four records of National Monuments exist on the zoned site (see **Figure 11-4**). It is Council Policy to protect sites, monuments, places, areas or objects as set out in HER POL 1 and other archaeological heritage polices below. The National Monuments are not visible to the untrained eye and therefore do not contribute to landscape character and views.

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*Figure 11-4 Excerpt from Geohive showing the location of National Monuments in the area.*

Archaeological Heritage:

- *HER Pol 1: To protect sites, monuments, places, areas or objects of the following categories: • Sites and monuments included in the Sites and Monuments Record as maintained by the National Monuments Service of the Department of Culture, Heritage and the Gaeltacht;*
    - *Monuments and places included in the Record of Monuments and Places as established under the National Monuments Acts;*
    - *Historic monuments and archaeological areas included in the Register of Historic Monuments as established under the National Monuments Acts;*
    - *National monuments subject to Preservation Orders under the National Monuments Acts and national monuments which are in the ownership or guardianship of the Minister for Culture, Heritage and the Gaeltacht or a local authority;*
    - *Archaeological objects within the meaning of the National Monuments Acts; and Wrecks protected under the National Monuments Acts or otherwise included in the Shipwreck Inventory maintained by the National Monuments Service of the Department of Culture, Heritage and the Gaeltacht*.
- HER POL 2: To protect all sites and features of archaeological interest discovered subsequent to the publication of the Record of Monument and Places, in situ (or at a minimum preservation by record) having regard to the advice and recommendations of the National Monuments Service of the Department of Culture, Heritage and the Gaeltacht and The Framework and Principles for the Protection of the Archaeological Heritage (1999).
- *HER POL 4: To require, as part of the development management process, archaeological impact assessments, geophysical survey, test excavations or monitoring as appropriate, where development proposals involve ground clearance of more than half a hectare or for linear developments over one kilometre in length; or developments in proximity to areas with a density of known archaeological monuments and history of discovery as identified by a suitably qualified archaeologist.*

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- *HER POL 5: To seek guidance from the National Museum of Ireland where an unrecorded archaeological object is discovered, or the National Monuments Service in the case of an unrecorded archaeological site.*
- *HER OBJ 2: To ensure that development in the vicinity of a Recorded Monument or Zone of Archaeological Potential is sited and designed in a sensitive manner with a view to minimal detraction from the monument or its setting.*
- *HER OBJ 3: To protect important archaeological landscapes from inappropriate development.*
- *HER OBJ 4 :To encourage the management and maintenance of the County's archaeological heritage, including historic burial grounds 2, in accordance with best conservation practice that considers the impact of climate change.*

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Architectural Conservation Areas ("ACA"s)

There are no ACAs in the immediate vicinity of the development site. Oldbridge Estate is the closest ACA to the site located approximately 1,260m to the NW of the development site. It is Council Policy HER POL 20, "*To require that all development proposals within or contiguous to an ACA be sympathetic to the character of the area, that the design is appropriate in terms of height, scale, plot density, layout, materials and finishes and are appropriately sited and designed with regard to the advice given in the Statements of Character for each area, where available*".

The estate gardens are also protected by Policy HER OBJ 28, which seeks, "*To discourage development that would adversely affect the character, the principal components of, or the setting of historic parks, gardens and demesnes of heritage significance."*

Natural Heritage and Designated Sites

MCDP describes the County's natural heritage to include scenic river valleys, rolling farmland, a network of mature hedgerows and diverse coastal habitats. The River Boyne is a valuable natural and cultural asset. The northern boundary of the site abuts a Special Area of Conservation ("SAC") and a proposed National Heritage Area ("NHA") and is very close to a Special Protection Area ("SPA") boundary (see **Figure 11-5**).

The value of Green infrastructure, woodlands, trees and hedgerows are supported by the MCDP. It is noted that Meath is one of the least wooded counties in Ireland. Small and fragmented woodlands are located particularly along the lower stretches of the river Boyne as found in the northern area of the development site. As such, the following policies are relevant;

Natural Heritage

- HER POL 27: *To protect, conserve and enhance the County's biodiversity where appropriate.*
- HER POL 28: *To integrate in the development management process the protection and enhancement of biodiversity and landscape features wherever possible, by minimising adverse impacts on existing habitats (whether designated or not) and by including mitigation and/or compensation measures, as appropriate*.
- HER POL 31: *To ensure that the ecological impact of all development proposals on habitats and species are appropriately assessed by suitably qualified professional(s) in accordance with best practice guidelines – e.g. the preparation of an Ecological Impact Assessment (EcIA), Screening Statement for Appropriate Assessment, Environmental Impact Assessment, Natura Impact Statement (NIS), species surveys etc. (as appropriate)*

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- HER POL 37: *To encourage the retention of hedgerows and other distinctive boundary treatments in rural areas and prevent loss and fragmentation, where practically possible. Where removal of a hedgerow, stone wall or other distinctive boundary treatment is unavoidable, mitigation by provision of the same type of boundary will be required.*
- HER POL 38: *To promote and encourage planting of native hedgerow species in new developments and as part of the Council's own landscaping works.*
- HER POL 39: *To recognise the archaeological importance of townland boundaries including hedgerows and promote their protection and retention.*
- HER POL 40: *To protect and encourage the effective management of native and semi-natural woodlands, groups of trees and individual trees and to encourage the retention of mature trees and the use of tree surgery rather than felling, where possible, when undertaking, approving or authorising development.*

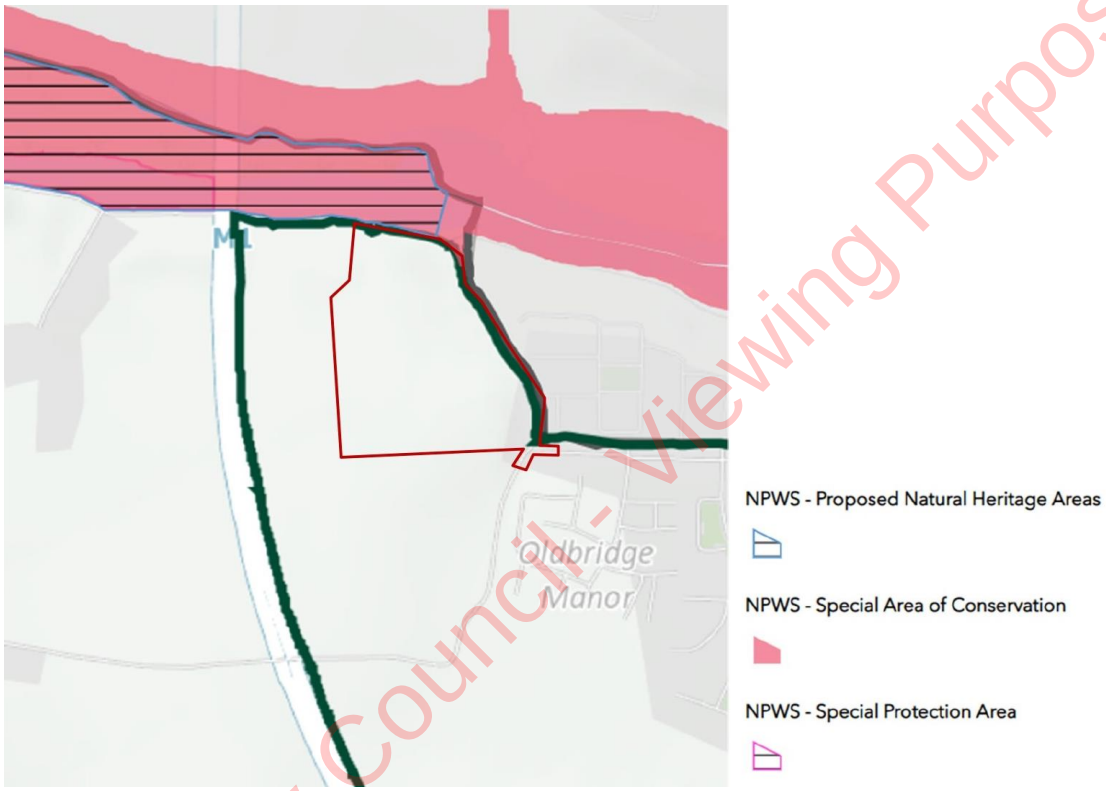



*Figure 11-5 Excerpt from Meath Plan showing location of the SAC, pNHA and SPA in relation to the site*

Landscape Character

The Meath County Development Plan outlines the importance of landscape on a European and National Level. At a County Level, Meath has embedded landscape within policy and has undertaken a Landscape Character Assessment that has identified landscape character types, areas' sensitivity and capacity for change. It is strategic policy "to protect the landscape character, quality, and local distinctiveness of County Meath in accordance with relevant government policy and guidelines and the recommendations included in Meath Landscape Character Assessment (2007) in Appendix 7". It is an objective of Meath County Council HER OBJ 49: "to ensure that the management of development will have regard to the value of the landscape, its character, importance, sensitivity and capacity to absorb change as outlined in Appendix 5 Meath Landscape Character Assessment and its recommendations."

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According to the Meath Landscape Character Assessment, the Rathmullan Road development site is location within Landscape character Area 7 “Coastal Plain” (see **Figure 11-6** below).

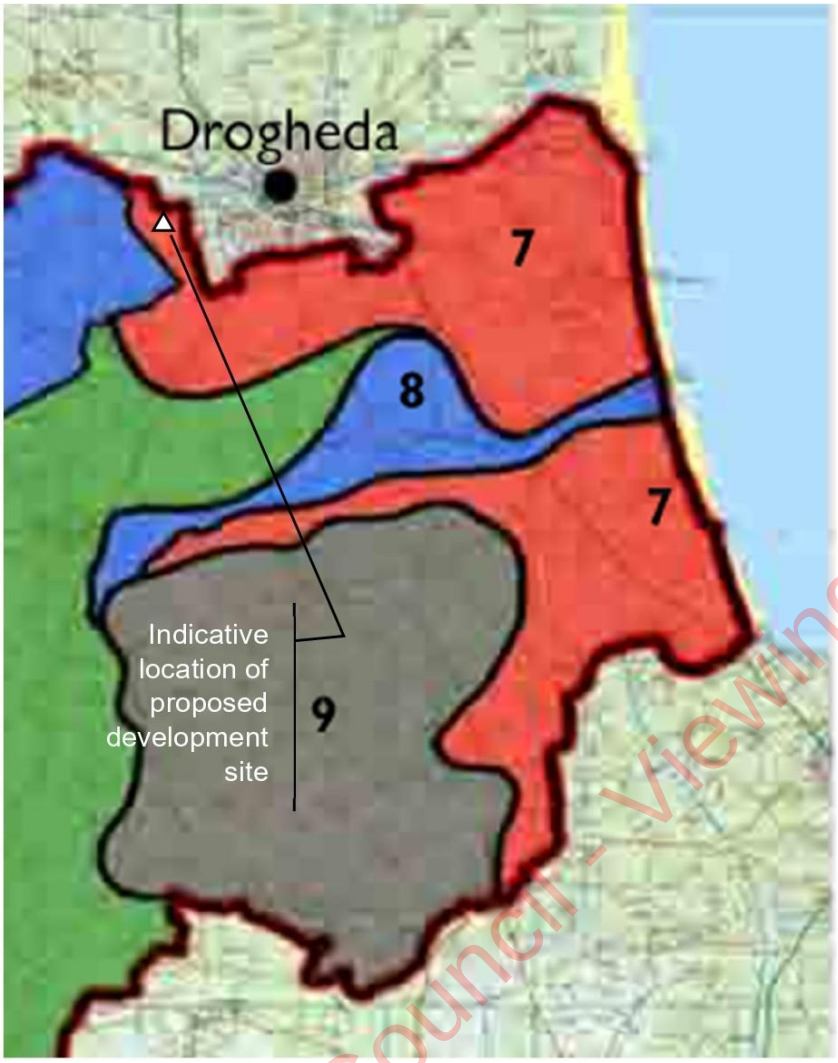



*Figure 11-6 Excerpt from Meath County Council’s Landscape Character Assessment*

Characteristics of the area include;

- Settlements such as Drogheda and Bettystown and built structures such as the Mary McAleese Bridge and the M1 within long established mixed scale farmland, the River Boyne, estate, coastal and estuary landscapes.
- Ground conditions suit those trees that thrive in free-draining soil such as Beech, Oak, Ash and Lime.
- Mix of small - medium rough pasture fields.
- Stands of pine and mixed woodland adjacent to estuaries.
- 1 proposed Special Protection Area (SPA) Boyne Estuary
- Overgrown scrappy hedgerows
- Long established mixed scale farmland.
- Bettystown, Laytown and Drogheda environs are the largest settlements.
- River Boyne
- Estate landscapes.
- Boyne estuary is an attractive area sustaining a variety of habitats

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- The **Landscape Value** of this LCA has been assessed as **Moderate**
- The **Landscape Sensitivity** of this LCA has been assessed as **High**
- The **Landscape Importance** of this LCA has been assessed as **Regional**

The potential capacity of the LCA in relation to the proposal is as follows:

"Medium potential capacity to incorporate multi-house residential developments as they are part of the existing character. However, particular attention must be paid to design, location, scale and materials so as to avoid adverse cumulative effects" (p.51).

The following strategic policies and objectives note the importance of Meath's landscape character.

- *HER Policy 52: To protect and enhance the quality, character, and distinctiveness of the landscapes of the County in accordance with national policy and guidelines and the recommendations of the Meath Landscape Character Assessment (2007) in Appendix 5, to ensure that new development meets high standards of siting and design"*
- *HER Policy 53: To discourage proposals necessitating the removal of extensive amount of trees, hedgerows and historic walls or other distinctive boundary treatments.*
- *HER OBJ 50: To ensure that the management of development will have regard to the value of the landscape, its character, importance, sensitivity and capacity to absorb change as outlined in Appendix 5 Meath Landscape Character Assessment and its recommendations*

However, it is worth noting that the site is located within the far northern end of the Coastal Plain LCA and relates to the fringes of the Drogheda settlement and not typical in character of this LCA's wider lowlands areas which are largely located nearer to the county's eastern coast line

Views and Prospects

The Meath County Development Plan highlights the importance of views and prospects in the County. It is an objective of the Council; "to preserve the views and prospects and the amenity of places and features of natural beauty or interest listed in Appendix 10 and shown on Map 8.6 from development that would interfere with the character and visual amenity of the landscape". Importantly, the Development Plan notes that, "in assessing the potential impacts on views and prospects of development proposals, it is not proposed that this should give rise to the prohibition of development in these locations. Rather such development, where permitted, should not hinder or obstruct these views and prospects and should be designed and located so as not to be intrusive in the landscape as seen from these vantage points".

View 61 from Donore Cemetery is a protected viewpoint that from which it is possible to see the site south of Rathmullan Road (see **Figure 11-7**). According to Appendix 10 of the Development Plan, this view is of international significance with views to the north, east and west. It includes an, "*expansive view of settled lowland with extensive urbanisation and industry visible to the east and north. Views to the north are extensive and encompass important cultural landscape of significance. Much woodland to north and west*".

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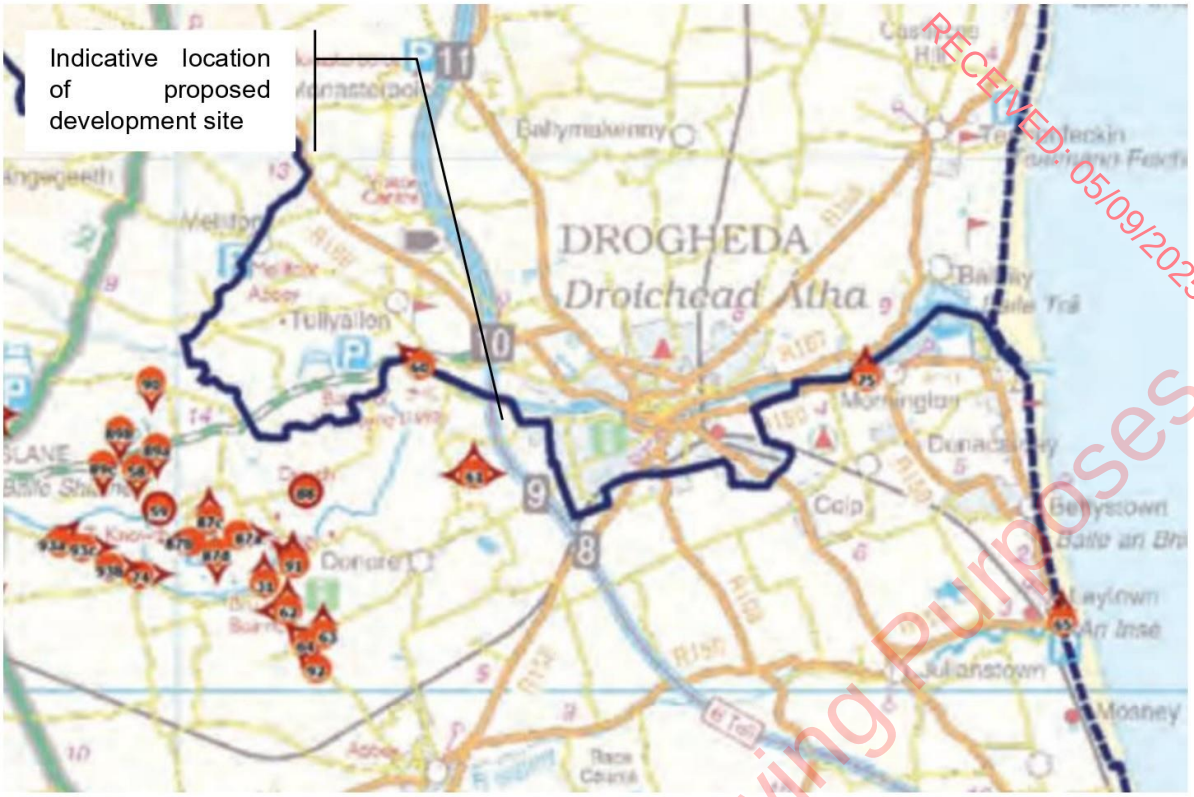



*Figure 11-7 Excerpt from Meath County Council's Map 9.5.1 Views and Prospects*

### *11.3.2.2 South Drogheda Urban Area Plan (or Joint Urban Area Plan)*

Volume 2 of Meath County Development Plan 2021-2027 provides a brief description and development strategy for South Drogheda Environs. As required by Regional Policy Objective 4.11 in the RSES1, a Joint Urban Area Plan (UAP) is to be prepared by Meath County Council and Louth County Council during the life of the Meath County Development Plan 2021-2027

Pending the completion of this Urban Area Plan, a written statement and land use zoning objectives map to establish a framework for inter alia the future UAP, to support economic development and to provide a basis for continued operation of the development management process pending the completion of the UAP has been included.

The Development Strategy for the area will focus on the creation of a sustainable settlement with improved links and connections to the town centre and where there is a balance between population growth and economic development.'

*"This Plan will support the creation of sustainable communities in South Drogheda, with the development of residential lands being dependent on the provision of any necessary social and physical infrastructure."*

- *STH DRO POL 1 To support the continued development of Drogheda as an attractive, vibrant, and accessible Regional Growth Centre that functions as a focal point for economic investment and population growth along the Dublin-Belfast Economic Corridor.*
- *STH DRO OBJ 2 To support the sustainable development of existing zoned lands in the Southern Environs of Drogheda with a particular emphasis on the promotion of the IDA"* Business Park as a location for strategic economic investment and the creation

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of compact, residential communities in key locations in proximity to established residential areas and transport hubs

#### *11.3.2.3 Consolidated Louth County Development Plan 2021-2027 (incl. Variations 1 &2)*

The site of Proposed Development almost abuts the County Louth border which follows the Rathmullan Road. Hence, it is appropriate to briefly explore the relevant policy in the Louth County Development Plan 2021-2027 that may be relevant to the Proposed Development.

Strategic Objectives

Relevant strategic vision of Louth County Council is to;

- "*Promote County Louth, in particular the Regional Growth Centres of Drogheda and Dundalk, as uniquely attractive places in which to live, work, visit and do business and where the quality of employment and educational opportunities, natural and built environment, cultural experiences and provision of inclusive communities are all to the highest standards, while transitioning to a low carbon and climate resilient society*".

In keeping with Meath County Council and the contents of the Regional Planning Guidelines, Drogheda is identified as a Large Growth Town 1. It is Council policy, "*Support and promote the role of Drogheda and Dundalk as key designated Regional Growth Centres with high levels of self-sustaining employment and services, to act as regional economic drivers, playing a significant role for a wide catchment area and to help achieve a more coordinated and sustainable settlement and travel pattern across the region*" (Policy SO 1).

Development Zones

Louth County Council have identified six development zones. The following excerpt from the zoning plan illustrates those adjacent to the site (see **Figure 11-8**). The subject is closest to

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Zone 2 and 'Drogheda Urban Centre'.

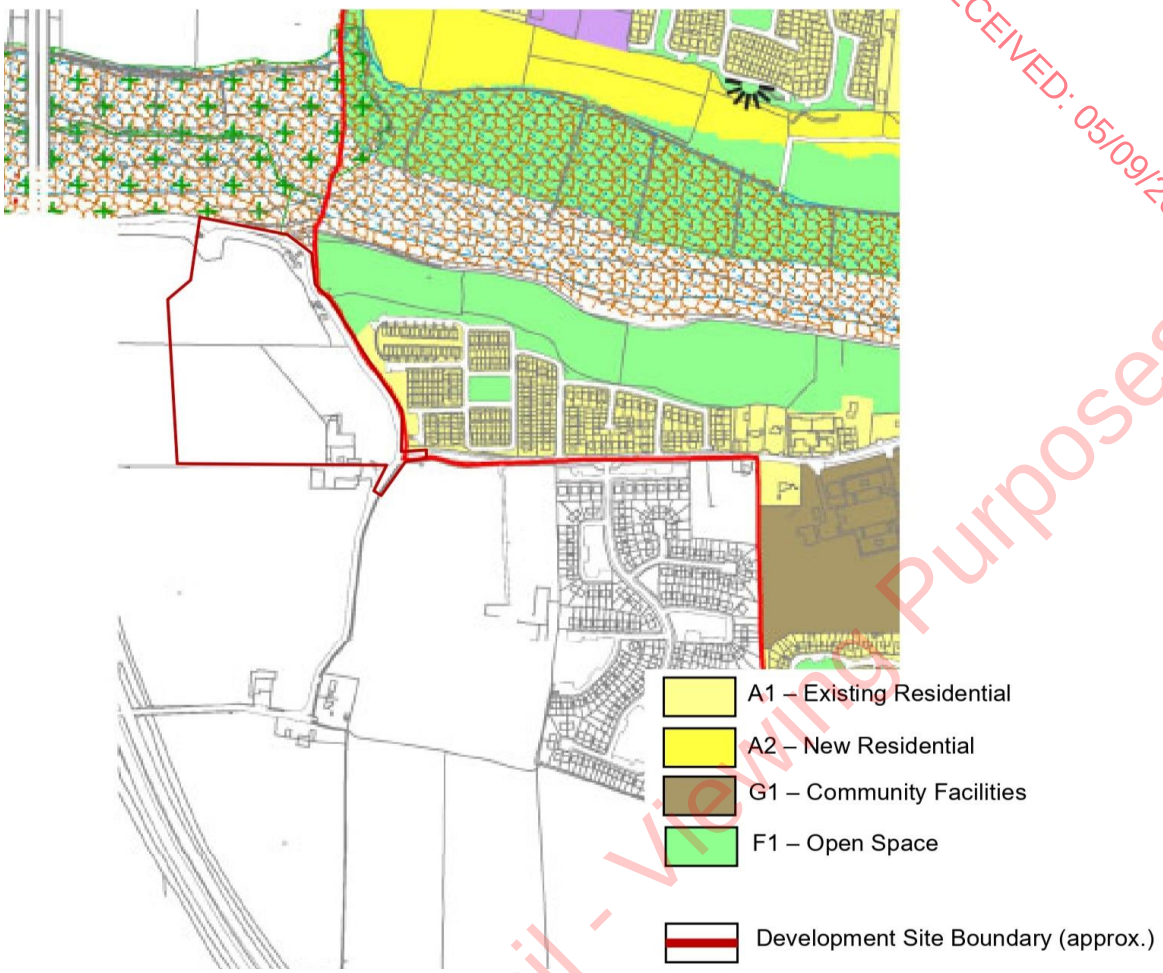



*Figure 11-8 Excerpt from Louth County Council's Development Zone Map 3.1*

Development Zone 2 aims to "protect the scenic quality of the landscape and facilitate development required to sustain the existing rural community". The Development Plan states, "the area covered by this development zone contains landscapes of high scenic quality which the Council considers should be protected" .

Development Zone 4 aims to "provide for a greenbelt area around the urban centres of Dundalk, Drogheda, and Ardee" .

Development Zone 6 aims to "preserve and protect the heritage and cultural landscape of the UNESCO World Heritage Site of Brú na Bóinne, the UNESCO (Tentative) World Heritage Site of Monasterboice and the Site of the Battle of the Boyne".

Urban Design Guidance

No part of the Proposed Development site will occur on in County Louth. However, it is worth including Louth County Council's Policy on Urban Design because it refers to context, connectivity and local distinctiveness (which relates to landscape character). Policy SO 9 requires that, "*To protect and enhance the unique character and identity of Louth's towns and villages and improve quality of life and well-being through the application of Healthy Placemaking, underpinned by good urban design with the creation of attractive public spaces*

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*that are age friendly vibrant, distinctive, safe and accessible and which promote and facilitate positive social interaction."*

Pedestrian and Cycle Infrastructure

Policy SS 17 requires, "*To work with the NTA, local landowners, and developers to implement an integrated pedestrian and cycle path network throughout Drogheda, recognising the highest priority to be given to cycling and walking over other modes of transport.".*

Natural Heritage and Biodiversity

Policy NBG 7 states the need, "*to co-operate with the Regional Planning Authority and adjoining local authorities, public agencies and community interests to protect regionally significant heritage assets, environmental quality and to identify threats to existing environmental quality in a transboundary context throughout the region including Northern Ireland*".

The Boyne Coast and Estuary (NH1957) has or will be designated as a Natural Heritage Area as will the Boyne River Islands (NH1862) in recognition of their unique nature or outstanding importance at a national level either ecologically or geologically.

Policy NBG 15 will "*To ensure that any development within or adjacent to a NHA or pNHA is designed and sited to minimise its impact on the ecological value of the site and to resist development that would result in a significant deterioration of habitats or a disturbance of species*."

Landscape Character Areas

The Louth Landscape Character Assessment was undertaken in 2002 not including major towns. The site is located to the south of the Boyne and Mattock Valley LCA which was assessed as being Nationally important.

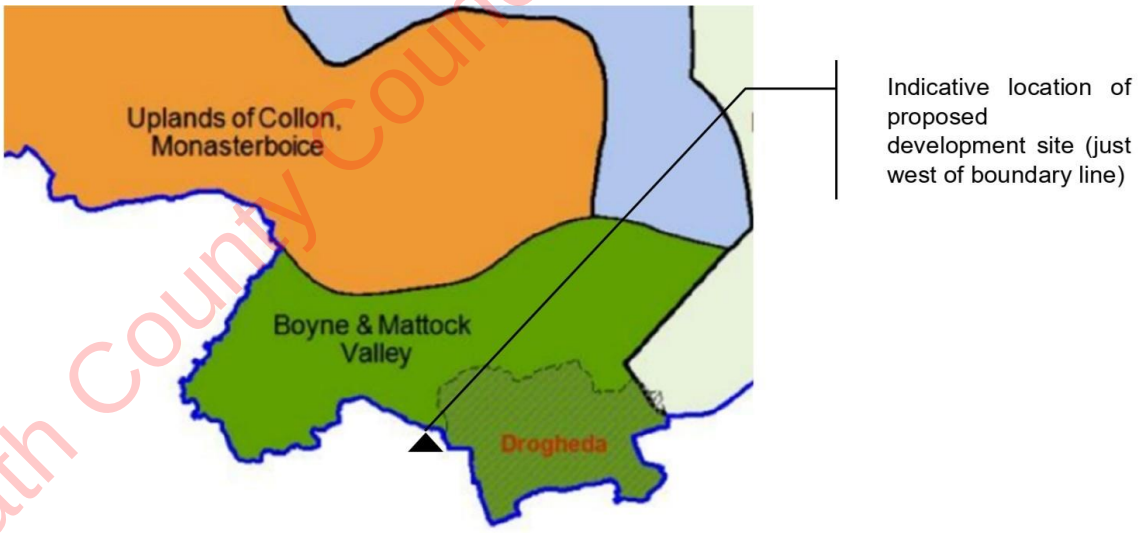



*Figure 11-9 Excerpt from Louth County Council's Landscape Character Areas Map 8.5*

The following policies are relevant to Landscape Character;

- *Policy NBG 23:* T*o ensure the preservation of the uniqueness of a landscape character type by having regard to its character, value and objectives in accordance with national*

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*policy and guidelines and the Louth Landscape Character Assessment and by ensuring that new development meets high standards of siting and design and does not unduly damage or detract from the character of a landscape or natural environment.*

- *Policy NBG 24: To ensure development reflects and, where possible, reinforces the distinctiveness and sense of place of the landscape character types including the retention of important features or characteristics, taking into account the various elements, which contribute to their distinctiveness such as scenic quality, habitats, settlement pattern, historic heritage and land use.*
- *Policy NBG 28 states the requirement, "to co-operate with adjoining local authorities, both north and south of the border, to ensure that the environment is maintained in a sustainable manner and to support the coordinated designation of sensitive landscapes and policy approaches with adjoining areas and on all aspects of environmental protection, particularly where transboundary environmental vulnerabilities are identified" .*

The key characteristics of the Boyne and Mattock Valley are as follows:

- Land tends to slope southward presenting panoramic views of Drogheda, the Coast and the plains of Meath. This landscape area should be considered as one which includes the southern side of the Boyne as defined by Meath Co. Council.
- Noted for its archaeological, historical and landscape values.
- New motorway Mary McAleese Bridge has already become a dominant landscape icon. New interchanges will attract new commercial and industrial development.
- Drogheda town is recognised as being within the commuter belt for the greater Dublin region where in-migration is expected to increase at an even greater pace than in the past.
- Hinterlands of Drogheda are subject to pressures for further isolated housing development, mainly generated from within the town itself.
- The area is quite extensively covered with broadleaf trees and fine hedgerows.
- Popular Tourist destination particularly for bus tours from Dublin and beyond.
- Disused quarries tend to degrade the landscape qualities.

The following relevant recommendations are made in relation to Landscape Values;

- Panoramic views across the town of Drogheda into plains of Meath – Conserve
- Landscape quality has largely remained intact, in terms of field patterns, hedgerows and stone walls. Conserve / Enhance
- Rich in archaeological features which include old Mellifont along with St. Lawrence's Gate. Conserve.
- Scenic quality is enriched by the groups of mature broadleaf trees. Conserve & Restore

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- Steeped in important religious and military historical events. Conserve / Enhance / Restore
- Potential for recreational opportunities (particularly water based) Conserve / Enhance
- Listed Scenic routes to the west of Drogheda Conserve / Enhance.

Battle of the Boyne Sites

Louth County Council has mapped the Battle of the Boyne Sites, which include the site south of the Rathmullan Road (see **Figure 11-10** below). Policy BHC 11 aims, "*To work in partnership with Meath County Council, relevant agencies and the public to promote, understand, conserve and sustainably manage the Battlefield site of the Battle of the Boyne whilst protecting and enhancing its cultural landscape.*".

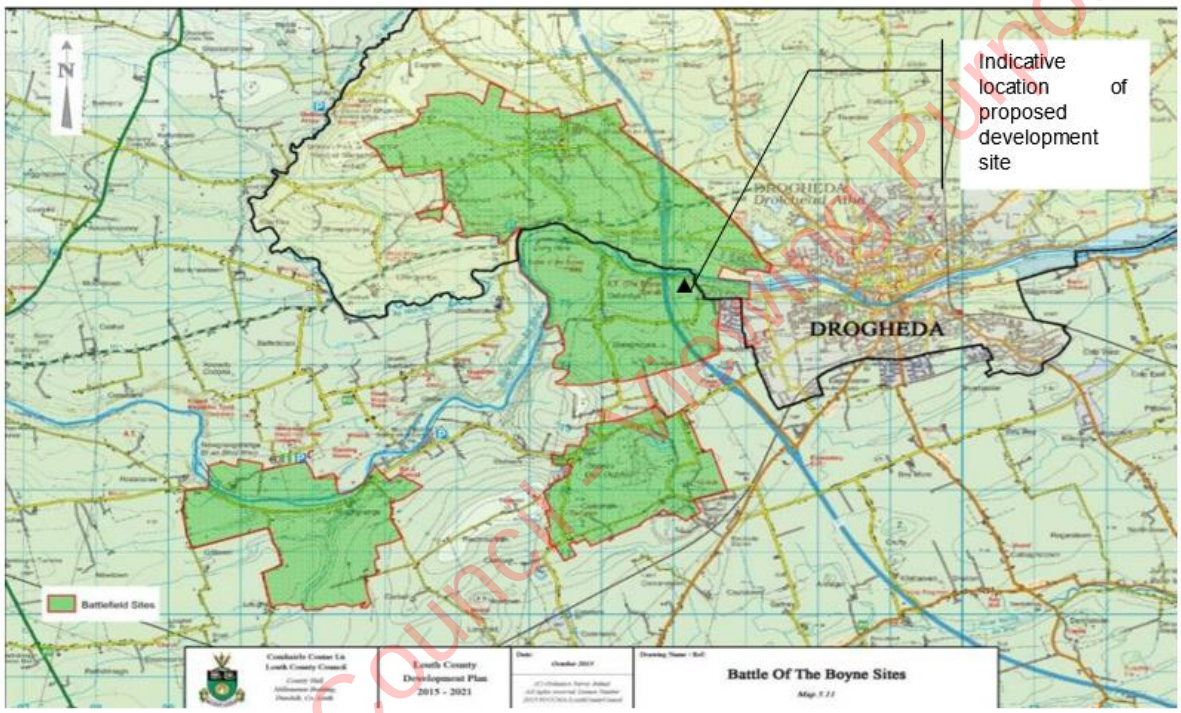
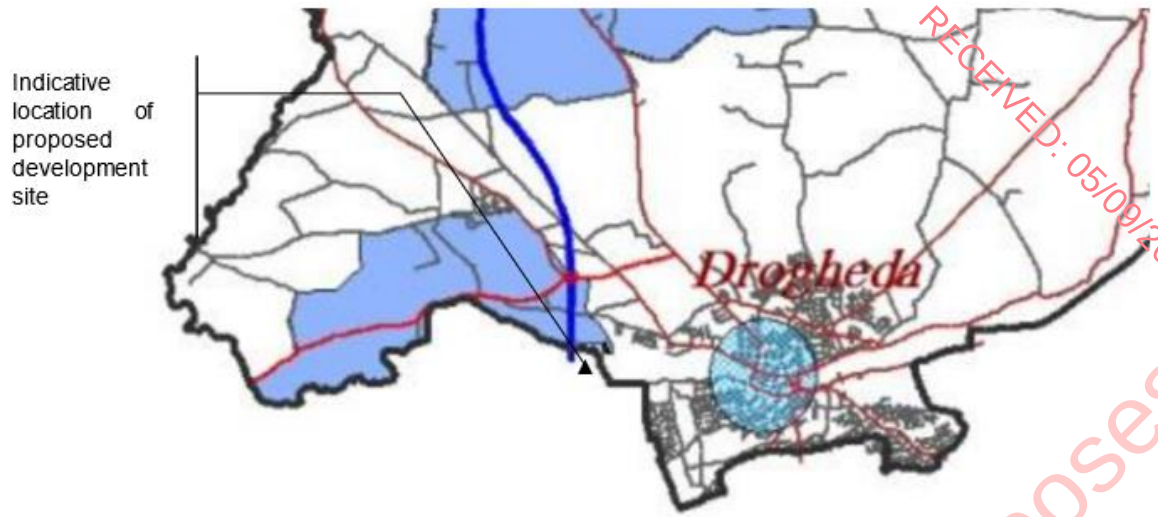



*Figure 11-10 Battle of the Boyne Sites Map 5.11 (p.153 of the Development Plan)*

Areas of High Scenic Quality

The Development Plan notes 6 areas that are designated Special Areas of High Scenic Quality (AHSQ). From the diagram below (see **Figure 11-11**), The Boyne Valley / King William's Glen AHSQ (3) appears to extend to the River Boyne. It is policy "*To protect the unspoiled rural landscapes of the Areas of High Scenic Quality (AHSQ) from inappropriate development for the benefit and enjoyment of current and future generations*." (NBG 37).

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*Figure 11-11 Special Areas of High Scenic Quality 5.16 (p.176 of the Development Plan)*

Views and Prospects of Special Amenity Value

It is policy of the Louth County Development Plan "*Protect and sustain the established appearance and character of views and prospects listed in Tables 8.14 – 8.18 of this Plan that contribute to the distinctive quality of the landscape, from inappropriate development.*" (NBG 37). Protected view 29 (shown in **Figure 11-12** below), looks south from the N51 at the M1 Retail Park, M1 and Mary McAleese Bridge. There is a ravine visible from this point which was the route of the Williamite army from their camp at Tullyallen hill to cross the Boyne river. Impacts upon this view will be considered as part of this assessment from Viewpoint 13 and reviewed within the Chapter 12 Archaeology and Cultural Heritage assessment of this EIAR.

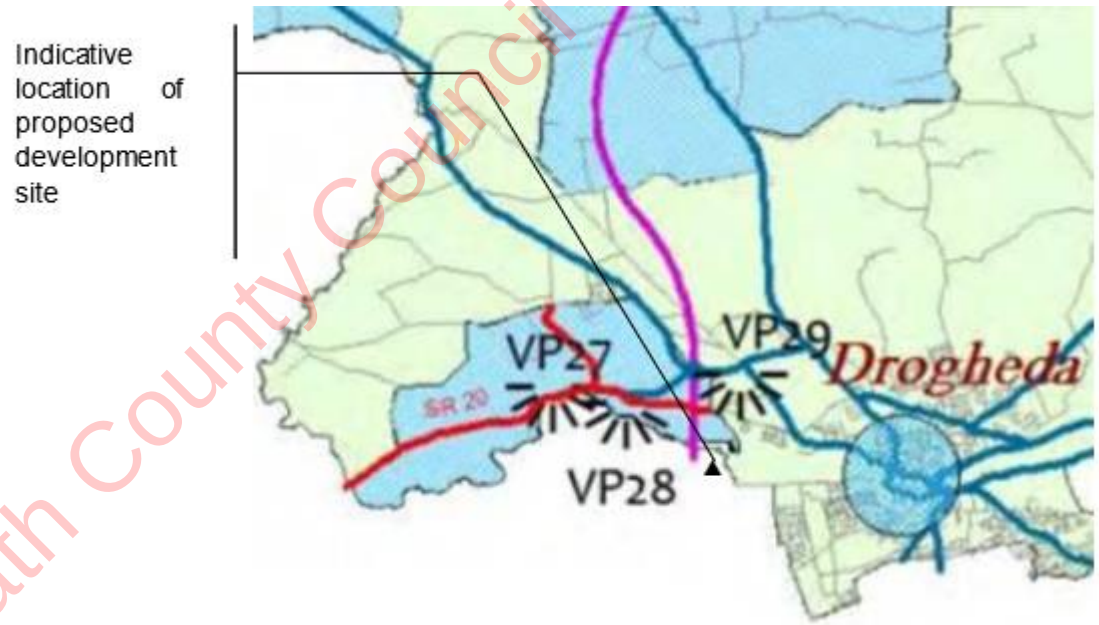



*Figure 11-12 Excerpt of County Louth's Views and Prospects Map 11.1*

Green Infrastructure

It is a policy of the Louth County Development Plan to "*To require the use of and develop the green infrastructure network, and support re-establishing connectivity to ensure the*

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*conservation and enhancement of biodiversity and as a supplementary guide for the protection and conservation of the European Sites in County Louth*" (NBG 42).

#### *11.3.2.4 Urban Development and Building Heights Guidelines (2018)*

'Urban Development and Building Heights, Guidelines for Planning Authorities, Department of Housing, Planning and Local Government' were issued by the Department of Housing in December 2018.

In order to discourage generic restrictive policies on building heights in local development plans the Government introduced the above guidelines. The guidelines set out to encourage higher building and densities within, particularly, existing built-up areas to take advantage of existing infrastructure, vary the building typology and contribute to placemaking.

Section 2.5 of the Guidelines states:

*"Furthermore, while taller buildings will bring much needed additional housing and economic development to well-located urban areas, they can also assist in reinforcing and contributing to a sense of place within a city or town centre, such as indicating the main centres of activity, important street junctions, public spaces and transport interchanges. In this manner, increased building height is a key factor in assisting modern placemaking and improving the overall quality of our urban environments."*

The guidelines require the applicant to demonstrate that they satisfy the following criteria:

<u>At the scale of the relevant city/town</u>

- *"The site is well served by public transport with high capacity, frequent service and good links to other modes of public transport.*
- *Development proposals incorporating increased building height, including proposals within architecturally sensitive areas, should successfully integrate into/ enhance the character and public realm of the area, having regard to topography, its cultural context, setting of key landmarks, protection of key views. Such development proposals shall undertake a landscape and visual assessment, by a suitably qualified practitioner such as a chartered landscape architect.*
- *On larger urban redevelopment sites, proposed developments should make a positive contribution to place-making, incorporating new streets and public spaces, using massing and height to achieve the required densities but with sufficient variety in scale and form to respond to the scale of adjoining developments and create visual interest in the streetscape."*

<u>At the scale of district/ neighbourhood/ street</u>

- *"The proposal responds to its overall natural and built environment and makes a positive contribution to the urban neighbourhood and streetscape.*
- *The proposal is not monolithic and avoids long, uninterrupted walls of building in the form of slab blocks with materials / building fabric well considered.*

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- *The proposal enhances the urban design context for public spaces and key thoroughfares and inland waterway/ marine frontage, thereby enabling additional height in development form to be favourably considered in terms of enhancing a sense of scale and enclosure while being in line with the requirements of "The Planning System and Flood Risk Management – Guidelines for Planning Authorities" (2009).*
- *The proposal makes a positive contribution to the improvement of legibility through the site or wider urban area within which the development is situated and integrates in a cohesive manner.*
- *The proposal positively contributes to the mix of uses and/ or building/dwelling typologies available in the neighbourhood."*

<u>At the scale of the site/building</u>

- *"The form, massing and height of proposed developments should be carefully modulated so as to maximise access to natural daylight, ventilation and views and minimise overshadowing and loss of light.*
- *Appropriate and reasonable regard should be taken of quantitative performance approaches to daylight provision outlined in guides like the Building Research Establishment's 'Site Layout Planning for Daylight and Sunlight' (2nd edition) or BS 8206-2: 2008 – 'Lighting for Buildings – Part 2: Code of Practice for Daylighting'.*
- *Where a proposal may not be able to fully meet all the requirements of the daylight provisions above, this must be clearly identified and a rationale for any alternative, compensatory design solutions must be set out, in respect of which the planning authority or An Bord Pleanála should apply their discretion, having regard to local factors including specific site constraints and the balancing of that assessment against the desirability of achieving wider planning objectives. Such objectives might include securing comprehensive urban regeneration and or an effective urban design and streetscape solution."*

#### *11.3.2.5 Planning history*

The site has several historic planning applications for similar residential development from 2006 onwards, with these details of these to be found within this submission's accompanying Planning Report.

More recent planning history of the site lands and neighbouring lands south of the existing Oldcastle Manor residential estate include previous approvals for residential housing, as listed below in **Table 11-8.** However, further development of these sites has not occurred following a High Court ruling in January 2023 that placed a stay on consideration of all planning appeals in the environs of Southern Drogheda (including in respect of the sites listed). As a result of *inter alia* the above referenced High Court decision, the site's previous approval by ABP was annulled and much of the affected lands, with the exception of the lands the subject of this proposed application, have been now rezoned as White Lands in the MCCDP as noted above.

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*Table 11-8: Planning History*

| Planning Ref/Status | **Development Details** |
|---|---|
| **Site Lands** | |
| **MCC SH35**<br>**ABP 305552-19 - Approved by ABP - later annulled** | "DIRECT APPLICATION TO AN BORD PLEANALA - SUBMISSION TO AN BORD PLEANALA". (i) demolition of existing farm buildings/structures (1160sqm) on site; (ii) construction of 661 no. residential dwellings and a neighbourhood centre adjacent to the site's eastern boundary, consisting of a childcare facility (486sqm), café (63sqm) and retail unit (318sqm); (iii) a 4-arm signalised junction and works to Rathmullan Road, including the widening of the existing carriageway to 6 metres and the provision of a 2 metre wide footpath linking the proposed development to the River Boyne Boardwalk; (iv) 2 no. priority junctions (one along the site's eastern boundary to provide access to the neighbourhood centre and one along the site's southern boundary to provide a second access to the development), realignment and upgrade works to the un-named local road along the site frontage to the south of the new signalised junction with Rathmullan Road; (v) Construction of a strategic foul water pumping station in the north-eastern corner of the site; and (vi) all associated site, landscaping and infrastructural works, including foul and surface water drainage, attenuation areas, open space areas, boundary walls and fences, internal roads and cycle paths and footpaths. The 661 no. residential dwellings consist of the following:<br><br>• 509 no. double storey semi-detached and terraced houses comprising 158 no. 2-bed houses, 269 no. 3-bed houses and 82 no. 4-bed houses; and<br>• 152 no. apartments (in Blocks B1, B2, B3, C, D, E & G which vary from 3 to 5 storeys in height) comprising 13 no. 1-bed apartments and 139 no. 2-bed apartments.<br><br>A total of 1,366 no. car parking spaces are proposed, including 1018 no. spaces (2 no. on curtilage spaces per dwelling) serving the proposed dwellings, 195 no. spaces serving the proposed apartments; 111 no. spaces serving visitors to the development; and 42 no. spaces serving the proposed neighbourhood centre. A total of 188 no. bicycle parking spaces are proposed, including 154 no. spaces serving the proposed apartments and 34 no. spaces serving the proposed neighbourhood centre. The development also features 9.15 hectares of public open space, including landscaped play spaces and pocket parks throughout the development and 6.13 hectares of landscaped open space provided adjacent to the Boyne River and M1 motorway frontages. This application is accompanied by an Environmental Impact Assessment Report (EIAR) and a Natura Impact Statement (NIS) |
| **Neighbouring Lands - to southeast side off Rathmullan road and south of Oldbridge Manor estate** | |
| **ABP 313187-22**<br>**No decision**<br><br>**MCC 211757**<br>**Approved by MCC but appealed to ABP** | Construction of 26 dwellings, South Of Oldbridge Manor, Rathmullen Road, Drogheda, Co. Meath |
| **ABP 313190**<br>**No decision**<br><br>**MCC 21169**<br>**Approved by MCC but appealed to ABP** | Construction of 96 dwellings. NIS lodged with application, South Of Oldbridge Manor, Rathmullen Road, Drogheda, Co. Meath |

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### 11.3.3 Description of Receiving Environment

The existing site and its environs are described below in terms of:

- Wider environs; and
- The site and its immediate surroundings

#### *11.3.3.1 Wider Environs*

Drogheda, on the Boyne is a medieval town just 20 minutes from Dublin Airport. Drogheda is the gateway to the world-famous Boyne Valley region and the UNESCO World Heritage Site of Brú na Bóinne .

It is located on the Dublin–Belfast corridor on the east coast of Ireland, mostly in County Louth but with the south fringes of the town in County Meath.

The town is situated in an area which contains a number of archaeological monuments dating from the Neolithic period onwards, of which the large passage tombs of Newgrange, Knowth, and Dowth of Brú na Bóinne are probably the best known.

River Boyne and Boyne Valley

The River Boyne is a river in Leinster, Ireland and is about 112km long. It rises at Trinity Well, Newberry Hall, near Carbury, County Kildare, and flows towards the northeast through County Meath and through the town of Drogheda to reach the Irish Sea between Mornington, County Meath, and Baltray, County Louth.

The Boyne Valley's rich collective of archaeological, historical and cultural sites and its landscapes is often described as being the birthplace of Ireland's Ancient East through various tourist promotions developed by the likes of Meath County Council, Fáilte Ireland and local tourist groups to encourage people to visit these sites and engage with the area's historic landscape.

The UNESCO World Heritage Site of Brú na Bóinne, the birthplace of Samhain on the Hill of Ward (Tlachtga), monasteries such as Mellifont Abbey, the battleground at the famous Battle of the Boyne Site, Boyne Valley Riverside Walks, and the Hill of Tara are some of the discovery points spread across the river valley.

Brú na Bóinne

Brú na Bóinne is a UNESCO World Heritage site and was inscribed on the World Heritage List in 1993. It is listed as 'Brú na Bóinne – the Archaeological Ensemble of the Bend of the Boyne'. The listing reflects the site's status as the richest archaeological landscape in Ireland. Brú na Bóinne has Europe's largest and most important concentration of prehistoric megalithic art.

Brú na Bóinne, which means the 'palace' or the 'mansion' of the Boyne, refers to the area within the bend of the River Boyne which contains one of the world's most important prehistoric landscapes. The archaeological landscape within Brú na Bóinne is dominated by three well-known large passage tombs, Knowth, Newgrange and Dowth, built some 5,000 years ago in the Neolithic or Late Stone Age. The main mounds are surrounded by a number of satellite monuments giving rise to one of the most globally significant archaeological complexes. The Brú na Bóinne tombs, in particular Knowth, contain the largest assemblage of megalithic art in Western Europe.

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### *11.3.3.2 The Site and its immediate surroundings*

The site lands and its environs are described below in terms of:

- Location and overview;
- Site Boundaries, Landcover, Field patterns and Vegetation
- Topography and Drainage;
- Access;
- Built and Cultural Heritage;
- Landscape character;
- Landscape and visual amenity;
- Landscape Value and Susceptibility
- Visibility

Individual aspects related to the proposed site are also highlighted under each heading listed above.

Location and Overview

The subject site extends to 9.20 hectares in size and is located within the southwestern environs of Drogheda, Co. Meath, c.1.7km from the town centre, situated adjacent to the Meath-Louth County Border and within approximately 200m of the M1 motorway to the west. The site has road frontage along Rathmullan Road, on the eastern site boundary, which has been improved by the Planning Authority in recent years.

(see **Figure 11-13**).




*Figure 11-13 Aerial photograph showing the site lands in its landscape context*

The lands predominantly comprise of two medium sized agricultural fields divided by hedgerows that range in maturity, quality and consistency. A dilapidated farm complex exists on the

site's eastern end located near the Rathmullan Road junction, off which these former farm buildings were accessed. To the very north of the site, on the steepest of the slopes there is a stretch of woodland separating the fields from the Rathmullan Road and Boyne River, with the site situated between 40-50 metres from the southern bank of the River Boyne and the site elevated c.10 metres above the riverbank.





*Plate 11-1 View north-westwards out of site Plate 11-2 View northwest from Oldbridge Manor Housing Estate towards the site*

Field patterns, Site Boundaries, Landcover, and Vegetation

The Proposed Development's site is located across part of two medium sized fields which are in keeping with the surrounding field pattern. The fields approximately measure: Northern field – 3.98ha and Southern Field– 6.01ha. At the time of the site visit, these fields were planted with an arable crop.

The site lands are bounded to the north by Rathmullan Road which wraps around the northeast corner of lands, and up what would have been a narrow ravine, before turning at 90° towards Drogheda town centre along the southeastern edge of the site boundary. Here the site's roadside boundary is marked by a continuous dense band of mature woodland along both field edges. The site's southern boundary is contained by an established native field hedgerow while its western boundary is open onto the two fields in which the site is located. Although further west each of these fields are contained by their existing hedgerow and an area formed by the M1 verge planting.







*Plate 11-3 View northeast along Sheephouse Road; Plate 11-4 View southeast along Rathmullan Road; and Plate 11-5 Field's western boundary off M1;*

To the north of the Rathmullan Road lies the River Boyne, which at this point, is wide and tidal and flows around the eastern extent of Yellow Island and at least one other small, vegetated

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mudflat. An off-road pedestrian and cycle route flanks the southern bank of the river which leads into Drogheda town centre and out towards Oldbridge. The wooded slopes of the lands to the south and southeast of the Rathmullan Road form an important woodland corridor that is rare across both County Meath and County Louth. The lower elevations of the Rathmullan Road are rural in character with mature native hedgerows and views through woodland to rising banksides and fields.

The eastern side of Rathmullan Road has been extensively upgraded in recent years to include a new pedestrian and cyclist resulting in some clearance of vegetation on the steep bank bordering the Riverside Estate and clearance of previous hedgerow formerly along the roadside boundary of Oldbridge Manor housing estate, which creates a more open boundary on this side of the road allowing views into these estates.

As such, most of the lands to the east and southeast of the lands are of an urban character and function.





*Plate 11-6 The Boyne River and its Island; and Plate 11-7 View along the Boyne River board to the north of the proposed site lands*

The lands directly south of the site consist of one single large arable field with a dilapidated farm shed next to this field's boundary edge with Sheephouse Road. Much of this neighbouring field is enclosed by its roadside high hawthorn hedgerow on Sheephouse Road. However, a section of the field boundary along this road as it rises to cross over the M1 is flanked by low timber fencing allowing open views across this field into the site lands.

These adjoining agricultural lands are currently zoned as white lands with a buffer of open space off the M1 corridor. The agricultural lands on the opposite side of Sheephouse Road are zoned for strategic employment lands.

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*Plate 11-8 Sheephouse Road looking north into adjoining lands and site;; and Plate 11-9 Adjoining lands and site's continuous field hedgerow bounding Sheephouse Road*

Land Use and Green Infrastructure

The M1 is located immediately to the west of the site fields, the verges of which are planted with semi-mature trees and vegetation. Beyond this, further west, lies the Brú na Bóinne World Heritage site and buffer zone. The motorway creates a clear divide between the urban and rural characters of this area although the River Boyne and its banks is an established green corridor that stretches in and through Drogheda town centre, emerging and merging into a low-lying estuary landscape.




*Plate 11-10 View over the WHS from Dowth; and Plate 11-11 View from the site of the urban fringe of Drogheda*

The edges of Drogheda are characterised by ribbon and infill residential, commercial and community developments that follow field boundaries and parcels of land. Between these developed and undergoing development lands are areas of agricultural lands of small-medium in scale and similar in character to the site lands. These lands have been zoned for urban uses in the future reflecting the expected changes to their agricultural land uses and characterises to a more urban environment as part of the continued growth of Drogheda town as guided by planning policy.

The immediate lands east and southeast of the site include several housing estates, including Riverbank to the east and Oldbridge Manor housing estate with community facilities, and Highlands estate both to the southeast. All of these estates run directly off of the Rathmullan

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Road and are characterised by small groups of predominantly 2 storey and some 3 storeys houses which are divided up by a series of short streets and mix of small central amenity spaces and larger amenity spaces to their outer boundaries.

Visible from within the site looking towards the northwestern edge of Drogheda town near to the M1 are a number of other new housing estates. These include Gort Mell and Tullybrook estate both off the Slane Road and part occupied and under construction housing. Also prominent in these views is the M1 Retail Park.

The lands between the lands and Drogheda contain a mixture of amenity green spaces, local parks and predominantly private gardens. To the north and west the landscape becomes increasingly wooded as it rises away from the river valley and towards Tullyallen, with Louth Hill (116m Above Ordnance Survey (AOD)) in the north-west and Red Mountain (134m AOD) in the north.

Landform. Topography and drainage;

The highest point of the site is in its southern section at a level of approx. 31mAOD. From this point, the land slopes very gently down in a northerly direction towards the Boyne River before steeply falling away down the wooded bank onto the Rathmullan Road at its northern boundary edge.

The gradient of the southern field is slightly steeper at approximately 3%. The northern-most field falls at a gradient of approximately 7.5%. The gradient of the wooded bank ranges between 24% and 50%.

Run-off all appears to be directed towards the river valley with no evidence of drainage ditches within the fields. There is however a ditch or gully located to the northwest of the Rathmullan Road which carries water collected from the lands into the River Boyne. This continues south of the Rathmullan Road junction to the east of Sheephouse Road

An outfall is located on Sheephouse Road. The condition of the pipework is poor and therefore creates groundwater discharge. Further details of waterflow occurring through the site and surroundings can be found in the Flood Risk Assessment included as part of this submission.

Access

As the lands have historically been largely in private agricultural use, there is currently no lawful public access to it. It is possible to access the lands from the farm access track and farm gate off the Rathmullan Road and gated farm entrance and shed on Sheephouse Road. There are no existing tracks or trails on the site lands. The steep topography and dense woodland south of the Rathmullan Road prevents access at this point.

Built and cultural heritage

The Boyne Valley has long attracted human settlement evidence which dates to pre-historic eras. There is evidence of an enclosure from the Middle Bronze Age (c.1500BC) in the northern field and in the adjoining field to the south of the site, there is evidence of a ring ditch and two cremation sites. Although none of these assets fall within the site limits. Their locations are marked in **Figure 11-14** below.

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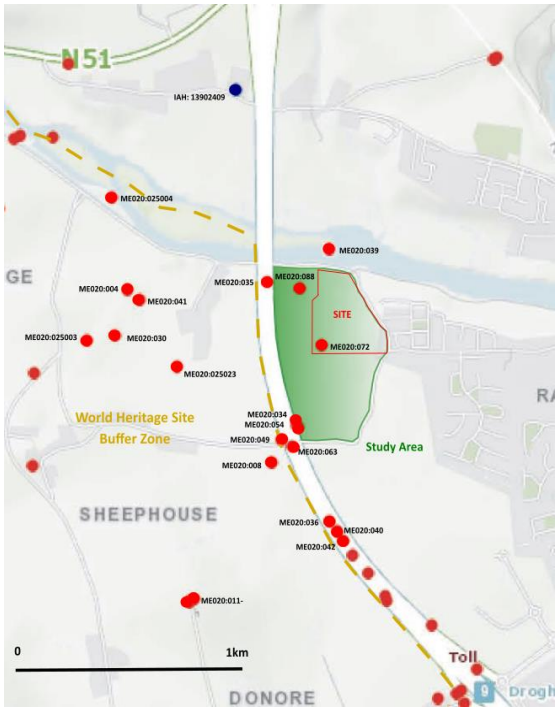



*Figure 11-14 Sites of Cultural Heritage Interest Sites Interest in the Vicinity of the Proposed Development Site (Map from SMR on line data base) – Prepared by AHC Ltd.*

Sporadic activity continued around these sites through the Iron Age and grew from the early ages of Christianity. The site lands were part of Mellifont Abbey's monastic lands until the 16th century. The abbey dates from 1142 and is located approximately 5.25km NW. The Cistercians were influential in shaping the landscape and agricultural development in their lands which were subdivided into granges or outlying farms.

Donore cemetery is visible from the subject site and is located 787m SW from it at Highlands (83m AOD). The remains of the Medieval church there and the graveyard adjacent date back to at least 1302-06. Donore Cemetery played an important role in the Battle of the Boyne which took place in 1690 between the Jacobite and Williamite armies. The core battle site is immediately east of the entrance to the Oldbridge estate however the battle spread 6.3km upstream and 1.5km downstream. The crossing at Mill Ford to the immediate north of the site lands were used by the Williamite Army as they advanced down the Drybridge gulley to the north, over the Boyne River and up the ravine where the Rathmullan Road is now, towards the Jacobites, who had lookouts positioned on the high ground overlooking the crossing. The Jacobites pulled back from Oldbridge to Donore Church and then Dunleek.

The site lands were then part of the Oldbridge Estate. A small farm is noted to have existed on the lands on the Griffith Valuations of the mid 1850s, the remains of which are likely part of the farm complex to the east of the site lands.

Further details on any archaeological, historical and cultural history elements and features located within the site and/or the surroundings can be found within Chapter 12 Archaeology and Cultural Heritage assessment of this EIAR.

<u>Landscape Character</u>

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The landscape character of the site lands is of a greenfield site containing strong urban influences. It is defined by its;

- Rolling landform that slopes gradually and then steeply towards the Boyne River
- Existing arable use of the two fields for a single crop of which the site covers 9.20ha.
- Gappy internal hedgerows running east-west
- Generally well-vegetated site land boundaries comprising the mature woodland to the north and north-west, the younger woodland verge planting along the M1 to the west and the hedgerows to the south and east, which are significantly more established to the east.
- Visual dominance of the elegantly designed Mary McAleese Bridge to the NW of the lands.
- Proximity to the Boyne River and its riverside walkway and cycleway
- Proximity to the M1 motorway and residential areas to the east
- Limited access to the landscape due to its arable use and private ownership
- Limited landscape features within the site lands.
- Long distance views north towards the M1 retail park and more contextually the rising land towards the northern escarpments, and south towards Donore Hill and Cemetery with limited views to the east and west.

The site can be split into two characters, set within the context of the urban fringe of Drogheda, County Meath:

- Worked arable fields and associated farm buildings. The site predominantly is gently sloping from south to north. The gradient gets much steeper to the north with the gradient of the wooded bank ranging from 24% to 50%. There is a topographical change of almost 22m across the site.

Mature and naturalistic deciduous woodland on the steep slopes of the River Boyne to the north of the site - This relatively narrow strip of land ranges from 25 to 65m in depth, is densely vegetated and provides a marker between the farmed landscape to the south and the ecologically rich Boyne River valley.

Landscape and visual amenity

The site lands offers landscape amenity as a backdrop to publicly accessible places around its periphery and makes a contribution to the wider landscape character of the area however offers negligible immediate amenity value because the lands are in private ownership.

The site environs are generally more visible from distances over 600m due to topography and peripheral vegetation. At this distance, the lands generally are perceived as part of the wider landscape and townscape. Closer partial views of the lands and site are available from the open space on the western side of the Oldbridge Manor residential estate and upper floors of some of the properties to the east within the estate and neighbouring Riverbank estate of the lands and from along and close to the M1 motorway. While closest views are screened from

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north and east by the northern woodland bank and along the nearest section of M1 by its buffer vegetation. A more detailed description of visual influence and the views themselves is found below and in **Section 11.5.2**.

It is not possible to see the River Boyne from within the site. From within the lands, views are available north towards the rising escarpment and aforementioned hills and south towards Donore Hill and Donore cemetery. The Mary McAleese Bridge is an attractive urban feature that is present in and sometimes dominates many of the views from within the site. These views are currently not available to the general public.




*Figure 11-15 Landscape Analysis*

### 11.3.4 Summary of Landscape Character and Values

The values and characteristics of the site are listed below and can be categorised in two ways – values which should be conserved, and those that provide opportunity for enhancement.

The values to be conserved indicate those aspects of the receiving environment which are valued and sensitive and could be negatively impacted on by the Proposed Development.

These include:

- Recognition of this area's cultural significance, ecological features and designated sites (SPA, NHA and SAC) in Policy.

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- Mature woodland to the north of the site lands, established hedgerows and roadside vegetation around the periphery of the site lands.
- Retention or enhancement of landscape character. It is important to note that multi-house development is considered a characteristic of Drogheda's hinterland.
- Medium and long-distance views from the surrounding area ,especially views that are designated as being important or those that are located within the WHS buffer zone but also residential properties and everyday views.
- The aesthetic quality derived from the site lands currently being vegetated contributes to the scenic qualities of the area, particularly from the north. The northernmost field is visible from the highest number of viewpoints.
- The views from the (currently private and therefore inaccessible) site lands towards Donore Cemetery, across the Boyne Valley (although some detractors are visible here including the derelict farm sheds on site, electrical infrastructure, built forms including the motorway, housing estates and M1 Retail Park to the north) and towards the Mary McAleese Bridge.
- Built and cultural heritage of the site lands including the bronze age enclosure and its role and relevance in the Battle of the Boyne.
- Proximity of the site to and as part of the River Boyne valley.

The values to be enhanced represent the site's capacity to accommodate change and therefore reflects landscape susceptibility.

These include:

- Objectives for Drogheda as an expanding town and designated Large Growth Town and Regional Growth Centre.
- Zoning of proposed site for residential development.
- Objectives to support compact, well-connected, high quality urban development with a strong sense of place
- Objectives for development to improve public access to open space and the countryside
- Objectives to improve the diversity, quality and recreational value of open space
- The degraded nature of some of the site lands' characteristics including the existing farm buildings, the internal hedgerows and the presence of pylons and overhead wires.
- The site lands have been in long standing agricultural use which has therefore limited the accessibility and diversity of the lands.
- The site lands are immediately east of the M1 motorway which separates it from the World Heritage Site buffer zone.

The enhancement values reflect change that is occurring in the landscape and its inherent robustness – this includes the location of the Proposed Development next to the existing

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western residential edge of Drogheda town and on lands zoned for new residential/open space uses intended to support the future sustainable growth of Drogheda town.

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## 11.4 Characteristics of the Proposed Development

The Proposed Development will consist of the permanent replacement of the site's greenfield area extending to 9.20 ha, consisting of open fields used for agriculture and its derelict farm buildings with a new housing development next to the southwestern environs of Drogheda town. The residential development will consist of a mix of two to four storey high housing which will be accessed from a single new entrance point off Rathmullan Road along with internal roads, footpaths and cycleways. The scheme will be supported by a mix of high quality landscaped amenity spaces throughout the site including a large park to its northern ends. Together with associated ancillary and infrastructure works.

Construction of the Proposed Development will be completed in one phase, provisionally planned to commence in 2026, with a 24-month construction programme.

**'A comprehensive description of the Proposed Development is presented in Chapter 2 of this EIAR'**.

Further details of the proposed scheme can also be found within this application's supporting Architectural, Engineering and Landscape Design documents and plans.

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*Figure 11-16 Proposed Development Site Layout (NDBA Architects Source 2025)*

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## 11.5 Potential Effects of the Proposed Development

### 11.5.1 Landscape Effects

Landscape Effects, as described above in **Section 11.2.2.3**, are a combination of the Magnitude of Change and the Sensitivity of the resource. The landscape effects can include effects on the physical fabric of the landscape, on the landscape as a resource, and also on the character of the landscape. The effect on the character includes aesthetic and perceptual aspects. Landscape Sensitivity relates to Landscape Value and Landscape Susceptibility. The sensitivity of the landscape receptor is related to the type of development proposed.

#### *11.5.1.1 Landscape Sensitivity*

The receiving environment consists and directly affects the physical character of the;

- Meath CC LCA 7 – Coastal Plain; and
- The subject land itself.

The predicted landscape effect on the two character areas listed above is assessed below.

The application site is adjacent to the following character areas and would not impact them in any physical way;

- The World Heritage Site Buffer zone
- Louth CC Character Area Boyne and Mattock Valley
- Drogheda Character Area Rathmullan & Legavoureen

A review of the extent to which the development will affect the views experienced from the three character areas are examined in Section 6 on this report.

The Landscape Sensitivity of the baseline landscapes defined in section 4.1 and 4.2 are as follows:-

- The landscape sensitivity of Meath CC's LCA 7 - Coastal Plain LCA is High in accordance with the MCC's assessment in section 4.1.1;
- The landscape sensitivity of the subject lands is Medium in accordance with the landscape conservation and enhancement values described in section 4.3;

#### *11.5.1.2 Construction Phase*

The construction stage will result in ongoing infrastructure, building and related works which will be completed over one phase within 24 months programme. Overall, the impacts described are temporary and visually adverse in nature.

**Construction Effects on LCA 7 (High Sensitivity)**

The effects during construction would relate to a very small geographical extent of this LCA, which in its totality includes lands along the coast between Gormanstown, Naul and Drogheda. The presence of a construction site in an otherwise established landscape would draw attention to it, despite the relatively small proportion of the view it would accommodate. Despite this, it is somewhat expected to see urban expansion on the periphery of towns and the type of development is in keeping with the characteristics of the area.

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The magnitude of change during construction is expected to be **Low**.

The significance of this effect would be **Moderate-Slight**.

Quality of the effect is **Adverse** and **Temporary**.

**Construction Effects on the Site (Medium sensitivity)**

The effects during construction are expected to be adverse. The existing mature woodland on the northern slope towards the Boyne River would be retained and protected. The Proposed Development is keeping in line with the planning policy and objectives for the subject lands on the western edge of Drogheda. The magnitude of change during construction is expected to be **High**.

The significance of this effect would be **Significant.**

Quality of the effect is **Adverse** and **Temporary**.

### *11.5.1.3 Operational Phase*

The impact of the development is the change of the site from arable land to a new residential area close to the M1 motorway and on the western edge of Drogheda in keeping with local development plans and policy.

- Whilst some trees and hedgerows will be affected, the new development has been laid out to safeguard almost all of the mature woodland on the site and where hedgerows and verge planting is lost, it is proposed to be replaced.
- The development includes a well-structured network of parks and open spaces offering active and passive recreation opportunities. There is a periphery woodland recreational route and cycle track that connects with a new neighbourhood park overlooking the Boyne Valley and softens all its edges.
- The main streets have swales running along them and there is a strong network of a range of different types of trees proposed.
- Further planting within the northern slopes of the parkland will soften views from the north.
-

**Operational Effects on LCA 7 (High Sensitivity)**

The effects of the development at operation would relate to a very limited geographical extent of this LCA. Key characteristics of the LCA that will be retained are the woodland. Key characteristics that will be lost include some internal hedgerows and the agricultural land. New characteristics gained include a well-designed housing development which has a strong legible structure with new, connected pedestrian and cycle routes and new active and passive recreational facilities. Multi-house residential developments are one of the key characteristics of the settlements found within this LCA and the subject lands are zoned for this use. Given

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the location of the Proposed Development next to the existing urban landscape of Drogheda town it will not impact upon the key coastal characteristics of this LCA.

The magnitude of change is expected to be **Low.**

The significance of this effect would be **Moderate-Slight.**

Quality of the effect is **Neutral.** This effect would be **Permanent.**

**Operational Effects on the Site (Medium sensitivity)**

The effects of the development at operation would relate to a moderate extent of the subject lands. The character of the northernmost area of the site would change moderately from being a private, open, arable field to a public park that open views across the valley. The rest of the site would change from agricultural lands to residential neighbourhood.

Although the (private) agricultural lands will be lost as part of this development, these will be replaced with a high-quality series of parks and habitats providing more diversity and more accessible countryside and greenspace. However, at operation, this will be a newly built neighbourhood and vegetation will not yet be fully grown or established. The change is characteristic in context.

The magnitude of change during operation is expected to be **High**.

The significance of this effect would be **Significant.**

Qualitatively the landscape effect is **Neutral** because the "*scheme complements the scale, landform and pattern of the landscape and maintains landscape quality*". This recognises that, whilst the change in character from agricultural to urban is substantial, it reflects land use policy for the site and has been applied to the site in accordance with best practice in terms of urban design, open space development and Green Infrastructure policy.

This effect would be **Permanent.**

### *11.5.1.4 Potential Cumulative Landscape Effects*

The Proposed Development is part of the wider expansion of Drogheda town in this area and part of the lands zoned for residential. Cumulatively this is transformative of the local high-quality rural landscape but is also in accordance with local policy supporting sustainable growth of the town. New development needs to seek to maintain Green Infrastructure networks, landscape structure – trees and woods – and a consistent materiality, particularly to ensure landscape capacity and the protection of views from designated locations/routes. These recommendations have been accommodated within the application submitted.

While the lands to the south are zoned as white lands and strategic employment meaning these are likely to be subject to future changes in the form of further urbanisation, there are no active planning proposals for development on these lands. As there is currently no other potential pending planning applications of a similar nature and scale within proximity of the Proposed Development there will be no cumulative effects to be considered here.

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Any new housing development which are at this stage are only partially constructed/occupied have been considered in the assessment of the existing baseline landscape taking account of their approved site layout when once built out.

Thus, the cumulative landscape effects would be: **None.**

### 11.5.2 Visual Effects

#### *11.5.2.1 Zone of Visual Influence and Potential Visual Receptors*

Based on the assessment of the landscape characteristics, values, and sensitivities, 26 no. potential viewpoints (VP) were selected for initial assessment. These are listed below in **Table 11-9** with a brief description, a rationale for the selection of the viewpoint and a brief indication of the extent of the site visible from the viewpoint.

Grey shading illustrates a lack of visibility from the selected viewpoint.

All potential views are recorded on **Figure 11-17** below. View P was assessed in two locations along the streets hence the P1 and P2 entries in forthcoming tables.

The result of the exercise was that the application site was visible from 17 no. viewpoints out of 26 no and 13 no. viewpoints were finalised for visual assessment and the preparation of photomontages.

The selection of viewpoints used in this visual assessment follows the same rationale as was undertaken for selecting views to be assessed in the visual assessments of past housing applications on the subject lands. The 13 no. viewpoint locations previously used for the subject land's 2023 application were reviewed against the Proposed Development's layout and a field visit. It was determined that same viewpoints were still valid to be considered in this assessment and photomontage production as there wasn't any notable changes to their existing baseline that could potentially alter views in the direction of the site.

*Table 11-9: Potential Viewpoints List*

| VP Ref. | Short description of receptor and view | Ratioanle for selection | Approx. Distance from site | Site visibility |
|---|---|---|---|---|
| **A*** | View NE from Sheephouse Road bridge | Nearby view on WHS buffer zone boundary. | 30m SW | Yes - partial |
| **B*** | View NE over gate to the west of cluster of homes on Sheephouse Road | Representative of views from residential receptors within the WHS Buffer Zone | 335m SW | Yes - partial |
| **C** | View NE from Oldbridge – between properties on Sheephouse Road | Representative of views from residential receptors. | 710m SW | No |
| **D*** | View NE from Donore cemetery | Protected viewpoint (61, MCC), Battle of the Boyne landmark and elevated viewpoint. National Monument ME01029 in WHS Buffer Zone. | 800m SW | Yes |
| **E*** | View east from Battle of the Boyne viewpoint, Oldbridge | Battle of the Boyne viewpoint in the WHS buffer zone | 835m W | Yes - partial |

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| VP Ref. | Short description of receptor and view | Ratioanle for selection | Approx. Distance from site | Site visibility |
|---|---|---|---|---|
| **F** | View east from the Battle of the Boyne visitor centre fields | Part of public walkway through landscape associated with a visitor destination | 950m W | No |
| **G*** | View SE from the driveways of Bloomsbury Cottage and 'Bouvinda' | Representative of views from residential properties in Oldbridge | 920m NW | No |
| **H** | View SE from the Battle of the Boyne visitor centre approach | Viewpoint in WHS buffer zone, is the setting of an ACA and is a popular visitor destination | 1460m NW | No |
| **I*** | View SE from Battle of the Boyne visitor centre hub | Viewpoint in WHS buffer zone and ACA and is a popular visitor destination. Noted on the National Inventory of Architectural Heritage (Ref 14402016) | 1890m NW | Yes-partial |
| **J** | View SE from N151 at the driveway of Townley Hall | Viewpoint from LCC's Scenic Route (20) and located in a Special Area of High Scenic Quality and representative of views from Townley Nature Reserve (protected VP27 LCC) | 2295m NW | No |
| **K*** | View SE from Drybridge House | Residential receptor noted on the National Inventory of architectural Heritage (Ref 13902409) and representative of views from the Drybridge Escarpment (protected VP28 LCC) | 730m NW | Yes |
| **L*** | View S from the Boyne River walkway on Rathmullan Road | Representative of the view experienced by users of the public footpath and road. | 15mN | Yes |
| **M*** | View south from road bridge on Hill of Rath Road | Representative of views experienced by road users | 1917m N | Yes |
| **N** | View SE from Mary McAleese Bridge | Public road on Mary McAleese Bridge providing a gateway experience for users | 80m NW | Yes |
| **O** | View west from The Square (north) | Elevated public of views from residential receptors | 85m E | Yes - partial |
| **P1*** | View south from The Square (south) | Representative of views from residential receptors | 119m E | Yes-partial |
| **P2*** | View south from The Square (south + east) | Representative of views from residential receptors | 35m NE | Yes- |
| **Q** | View west from The Dale | Representative of views from residential receptors | 35m E | Yes - partial |
| **R*** | View west from Rathmullan Road | View experienced when approaching the site from Drogheda | 145m E | Yes - partial |

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| VP Ref. | Short description of receptor and view | Ratioanle for selection | Approx. Distance from site | Site visibility |
|---|---|---|---|---|
| **S** | View west from The Way | Representative of views from residential receptors | 270m | No |
| **T** | View west from The Lawn | Representative of views from residential receptors | 375m | No |
| **U** | View SWW from Willow Grove | Representative of views from residential receptors | 1635m NEE | Yes - partial |
| **W*** | View SW from Boyne Hall | Representative of views from residential receptors | 740m NE | Yes - partial |
| **X*** | View S from Tullybrook Housing | Representative of views from residential receptors | 550m NNE | Yes - partial |
| **Y** | View south from N51 at Mell | Protected Viewpoint 29 (LCC) | 1227m N | Yes |
| **Z** | View NE from motorway junction | Representative of views from road user receptors | 1235mSW | No |

*notes the 13 viewpoints selected for the full assessment

In summary, the visual analysis undertaken to date concludes the following;

- The site lands are not visible from any of the viewpoints assessed within the World Heritage Site boundary.
- There are four receptors identified within the world heritage site buffer zone that will receive partial views of the development. The views of the development are in the opposite direction from the WHS. Of these, the view from Donore cemetery is the most expansive. The planning inspector's report on the previous submission noted, "*These views do, however occur at a distance of over one kilometre, and given the backdrop of the existing suburbs, the impact of the proposal would be to extend the existing developed area rather than effecting a fundamental change in the character of the landscape. Views from the point have also previously been altered by the construction of the M1 motorway.*"
- The site lands are visible from close proximity – albeit at speed when travelling south on the M1 motorway and from other localised views to the north (e.g. From Drybridge House).
- The lands are visible in close proximity, through well-established boundary vegetation from the adjacent housing areas to the east.
- The site lands are visible from residences to the north and NE on the opposite side of the valley.

It important to note that the visibility of the site lands or the scheme is not necessarily problematic. The viewpoints have been selected to provide a good representation of visual

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impacts and effects from around the subject lands. Sensitive viewpoints and those suggesting more rather than less visibility have been prioritised.

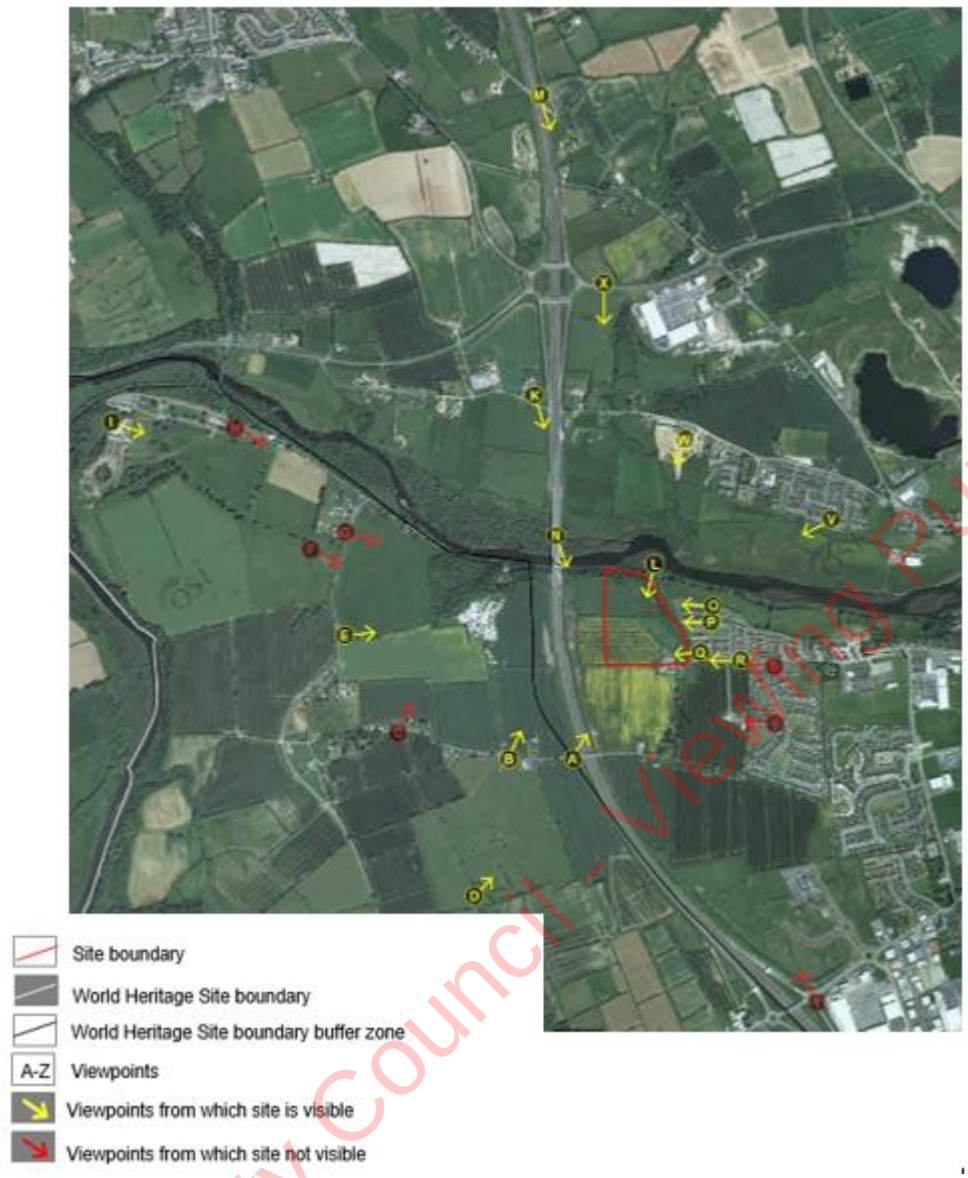



*Figure 11-17 Visibility of the site lands from potential viewpoints.*

### *11.5.2.2 Proposed Viewpoints*

Based on the assessment of the landscape characteristics, values and sensitivities, 13 viewpoints were selected for assessment of visual impact. The rationale for selection were discussed above. The finalised viewpoints are scheduled below in **Table 11-10** and illustrated in **Figure 11-18** below:

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*Table 11-10: Viewpoint Locations*

| VP Ref.* | Location of the Viewpoint |
|---|---|
| **1 (A)** | View NE from Sheephouse Road bridge |
| **2 (B)** | View NE over gate to the west of cluster of homes on Sheephouse Road |
| **3 (D)** | View NE from Donore cemetery |
| **4 (E)** | View east from Battle of the Boyne viewpoint, Oldbridge |
| **5 (G)** | View SE from the driveways of Bloomsbury Cottage and 'Bouvinda' |
| **6 (I)** | View SE from Battle of the Boyne visitor centre hub |
| **7 (K)** | View SE from Drybridge House |
| **8 (L)** | View S from the Boyne River walkway on Rathmullan Road |
| **9 (M)** | View south from road bridge on Hill of Rath Road |
| **10 (P)** | View south from The Square (south) |
| **11 (R)** | View west from Rathmullan Road |
| **12 (W)** | View S from Tullybrook Housing |
| **13 (X)** | View south from N51 at Mell |

*Viewpoint Numbers with corresponding lettering as listed in Table 11-9 and Figure 11-17 above

**Photography and Presentation of Viewpoints**

Photomontages have been produced by Chris Shackelton and are presented in a separate booklet with a map of their locations in Volume 3: Appendix 11-1 of this EIAR. Verified photographs and photomontages have been taken with a wide angle focal length (FL) and prime lens to allow representation of the development within its context. In all visualisations, the extent of the 50mm FL view has been indicated for reference, which is broadly equivalent to a c.40 degree Horizontal Field of View (HFoV) and is representative of what the human eye perceives and reflects the requirements of the Landscape Institute Technical Guidance Note on Visual Representation of Development Proposals, Landscape Institute (2019).

To correctly view the photomontage at the correct scale the extents of the 50mm lens or 40 degree angle of view should be extended to A3 in size and viewed at arms length. This can be done by printing a hard copy or, more easily, digitally on screen, allowing reference back to the wider angle to understand the context.

Each viewpoint is described below in its existing condition and the effects of the Proposed Development. The descriptions, including of the change / effects, focus primarily on the extent of the 50mm image, and the winter (worst case scenario) view, but refer to the context, as appropriate, to inform analysis.

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*Figure 11-18 Viewpoint Location Map (Source: CS Consulting 2025)*

### *11.5.2.3 Construction Phase*

Construction will be completed over one phase within 24 months programme.

The construction stage impacts generally consist of substantial site clearance, including trees and vegetation, and building processes required to construct the Proposed Development. These effects are predominantly adverse in nature, varying in magnitude and significance depending on visibility.

Construction effects are visually **Adverse** and of a **Temporary** duration.

### *11.5.2.4 Operational Phase*

The 13 selected viewpoints across the study area will be assessed here with the existing viewpoint conditions and the effects of the Proposed Development upon its existing view described below in the viewpoint's tablised text. Each viewpoint should be read in conjunction with the Photomontages Booklet included in Volume 3 Appendix 11-1. Also included in this pack is a proposed Computer Generated Image (CGI01) visual from the Mary McAleese Boyne Valley Bridge which is not a verified view but provided here to give context of a fleeting road users view from the motorway which does not form part of the visual assessment.

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**Viewpoint 1 - View NE from Sheephouse Road bridge**

| | | |
|---|---|---|
| *Existing View* | View from road bridge crossing the M1 motorway. Potentially used by pedestrians and vehicles. People using this route are likely to be noticing but not focusing on the landscape.<br><br>Near view is looking over the local road bridge towards the site over the M1 motorway and associated buffer planting and infrastructure. Further back, the view takes in the Mary McAleese Bridge. The subject lands themselves are barely visible between and behind the mature existing tree belt. The pylons and overhead wires located within the subject lands are seen above the tree lined bank. The upper portions of the M1 retail park buildings are barely visible through a gap in these trees. Although, there are no buildings present in the existing view that suggest the urban edge of Drogheda, the presence of the motorway and its associated planting very much emphasise the transition from the Battle of the Boyne Buffer Zone towards an urbanised place. | |
| ***Sensitivity*** | **Medium** | |
| **Visual Impacts and Effects** | | |
| ***Construction Effects*** | There maybe be some occasional temporaryviews of the uppermost arms of the operating cranes peering above the tree line next to the motorway. The effect would be Not significance, adverse and temporary to short term. | |
| ***Operational Phase*** | The development would not be visible from this location. There would be no change to the view. | |
| | *Magnitude of Change* | **No change** |
| | *Significance of Effects* | - |
| | *Quality* | - |
| | *Duration* | - |

**Viewpoint 2 - View NE over gate to the west of cluster of homes on Sheephouse Road**

| | |
|---|---|
| *Existing View* | View over gate and fields from Sheephouse Road between two rows of residential properties.<br><br>Oblique views available towards the site accommodating the treeline of the under-mature woodland belt along its western edge and the power lines routed alongside it. The proportion of the view accommodated by the site is very small. An (off-site) agricultural field dominates the foreground of the view. The Mary McAleese bridge is the principle visual feature, breaking the sky to the left-hand side of the view. To the left through the bridges supporting wires it is possible to view a new housing estate at Gort Mell, Slane Road. While right of the bridge , it is possible to clearly see the M1 retail park. Motorway signage, lighting and pylons are other detractors within this view. Any views from gardens and ground floor rooms of residential properties would be further interrupted by rear property boundaries, hedging and out-buildings |
| ***Sensitivity*** | **Medium** |

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| **Visual Impacts and Effects** | | |
|---|---|---|
| ***Construction Effects*** | There maybe be some occasional temporary views of the uppermost arms of the operating cranes peering above the tree line next to the motorway. The effect would be Not significance, adverse and temporary to short term. | |
| ***Operational Phase*** | The development would not be visible from this location. There would be no change to the view. | |
| | *Magnitude of Change* | **No change** |
| | *Significance of Effects* | - |
| | *Quality* | - |
| | *Duration* | - |

**Viewpoint 3 - View NE from Donore Cemetery**

| | |
|---|---|
| *Existing View* | Viewpoint located on the NE boundary of Donore cemetery, which is an attractive and atmospheric place of high cultural and historical significance recognised in policy.<br><br>This expansive, busy, panoramic view over the Boyne estuary represents the changing character of the landscape into townscape with views towards the Red Mountain to the left of the view on the horizon to Drogheda town to the right of the view in the middle to far distance where there is a continued expansion of housing throughout the town's limits with mixes of new houses and apartment blocks visible. The M1 motorway, and the modern Mary McAleese Bridge is visible in the middle to far distance against the backdrop of the fringes of Drogheda town. The extent of the site is visible at a low angle, in the middle of this view. Directly east of the site is the new Oldbridge estate and established Riverbank estate. To the fore of the site, the landscape is rural in character with agricultural fields and hedgerows with hedgerow trees crossing and punctuating the view. |
| ***Sensitivity*** | **High** |
| **Visual Impacts and Effects** | |
| ***Construction Effects*** | The construction stage would see partial visibility of some construction activity including vehicles and lifting machinery operating here visible above the treeline to the west and hoarding along the site's southern boundary. The effect would be of slight significance, adverse and temporary to short-term |
| ***Operational Phase*** | The development will be visible from this distance and will be perceived as part of the extension and consolidation of Drogheda's urban area. The Proposed Development is visible in the middle of the view in the middle-ground. Individual buildings and landscape features are likely to be identifiable at this distance, but the development would read as a continuum of the town. The development changes a small proportion of the view which otherwise contains a range of features and landscapes and the changes are in keeping with the rural-urban fringe landscape character of the area |

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| | | |
|---|---|---|
| | Although the change in the landscape will be new the existing woodland to the west of the site will help partially enclose the development. A proposed hedge running along the western boundary will help enclose the nearest housing and so limit views to that of their upper profiles. As such, the visual effects are limited and neutral. | |
| | *Magnitude of Change* | **Low** |
| | *Significance of Effects* | **Moderate** |
| | *Quality* | **Neutral** |
| | *Duration* | **Permanent** |

**Viewpoint 4 - View east from the Battle of the Boyne viewpoint**

| | | |
|---|---|---|
| *Existing View* | The viewpoint is from a small clearing adjacent to agricultural lands that is accessed via a pathway leading from the road to the west. The purpose of the clearing and the viewpoint is to illustrate the relevance of the landscape in the Battle of the Boyne and there is an information board explaining this. The purpose of visiting this receptor is to appreciate the view and the surrounding landscape although it is not recognised in Policy.<br><br>This view overlooks the Boyne valley. Although a wider panorama is visible from this viewpoint, the information board present encourages visitors to look northeast towards the historic point of interest – the battle route. To the far right-hand side of the view (in a westerly direction), pylons located within the subject lands and trees adjacent to the western boundary are visible over M1 screening vegetation. Although the existing site's agricultural lands are heavily screened by the areas of woodland. The Mary McAleese Bridge to the left of the view is a prominent structures protruding against the skyline. The bridge, electricity lines and the various rooflines on the suburban western edge of Drogheda clearly signal the presence of urbanity in this view. | |
| ***Sensitivity*** | **High** | |
| **Visual Impacts and Effects** | | |
| ***Construction Effects*** | There would be some potential for temporary views of the upper arms of the operating cranes peering above the intervening trees. The effect would be Not significant, adverse and temporary to short term. | |
| ***Operational Phase*** | A small portion of the development's roofline will be visible from this viewpoint above some of the lower tree cover. However, the small addition of roofs into the existing view will be barely perceivable as these will be read along with the existing housing estates roofs east of the site, with some existing rooflines remaining higher than the proposed roofs.. | |
| | *Magnitude of Change* | **Negligible** |
| | *Significance of Effects* | **Not Significant** |
| | *Quality* | **Neutral** |
| | *Duration* | **Permanent** |

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**Viewpoint 5 - Driveways to Bloomsbury and Buvinda Oldbridge**

| | | |
|---|---|---|
| *Existing View* | The viewpoint is located on the local road in front of the driveway entrance of Bloomsbury Cottage and Buvinda Driveway. The viewpoint is situated in front of a field gate along a local road and opposite to the entrance of the cottages, and is looking east. The viewpoint is about 960m to the west of the proposed site. The views are representative of views experienced by road users and views enjoyed by residents/visitors of Bloomsbury cottage and Buvinda Oldbridge.<br><br>The viewer is looking through (?)the field gate and boundary hedge in the foreground. The vast open green fields with undulating topography is visible in the middle ground. Woodland planting is visible in the background. There is evident change in elevation. Long distance views are screened due to change in the topography change. | |
| ***Sensitivity*** | **High** | |
| **Visual Impacts and Effects** | | |
| ***Construction Effects*** | There would be no effects during construction. | |
| ***Operational Phase*** | The development would not be visible from this location. There would be no change to the view. | |
| | *Magnitude of Change* | **No Change** |
| | *Significance of Effects* | - |
| | *Quality* | - |
| | *Duration* | - |

**Viewpoint 6 - View south-east from the Battle of the Boyne Visitor Centre – Oldbridge House**

| | |
|---|---|
| *Existing View* | Oldbridge House was built c.1750. It is a detached, seven bay, three storey house with low storey wings. The formal gardens are located to the south of the main house. Beyond these and to the east, the landscape setting is more pastoral in character with long distance views to the wooded Boyne River valley. On the western side of the main house, where the main visitor entrance is, there is a generous courtyard space which is at the same elevation as the house, containing a number of historical artefacts and information boards.<br><br>This view is dominated by the parkland associated with Oldbridge House. The lands slope from south to north, very gently, towards the River Boyne. The open grasslands are partially mown and grazed and contain some fine specimens of mature parkland trees, which break the horizon and the eye through the view. The gatehouse is visible to the left-hand side of the view. The backdrop of the view is primarily wooded with the church spires and tall buildings of Drogheda visible in the far distance. The wooded backdrop of the view is clearly horizontally split by the Mary McAleese Bridge and M1 motorway and the bridge itself is a dominant visual feature in the view. High sided vehicles can be seen travelling over the bridge. Pylons located on the site are just discernible on the horizon in the far distance. |
| ***Sensitivity*** | **High** |

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| | | |
|---|---|---|
| **Visual Impacts and Effects** | | |
| ***Construction Effects*** | There would be no effects during construction. | |
| ***Operational Phase*** | The development would not be visible from this location. There would be no change to the view. | |
| | *Magnitude of Change* | **No Change** |
| | *Significance of Effects* | - |
| | *Quality* | - |
| | *Duration* | - |

**Viewpoint 7 - View south-east from Drybridge House**

| | | |
|---|---|---|
| *Existing View* | Drybridge House is important example of heritage architecture in the form of a strong farmer's house built in 1820. Drybridge House and the adjacent property is set back from the road and there are several small and medium trees and one single large tree growing in the front garden of the two properties. The front gardens both have rendered boundary walls approximately 1.5m high. Opposite the houses, across the road there is a generous verge and low rendered wall.<br><br>The oblique view towards the subject lands from Drybridge House is wide and open and includes arable fields in the foreground, established hedgerows and young screening vegetation. The Mary McAleese Bridge is clearly visible in the middle distance as are the top half of lamp posts located along the M1 motorway which mark the presence of a more urban character. Electricity pylons cross the fieldscape which further detract from the rural quality of this view. In the far distance, above the hedgerows and trees, and between motorway signage and a gap in the hedge, it is possible to identify the subject lands, which accommodate a very small stretch of the view. Upon the distance hill is the outline of the factory buildings by Rathmullan north of the M1/Donore Road interchange. | |
| ***Sensitivity*** | **Low** | |
| **Visual Impacts and Effects** | | |
| ***Construction Effects*** | There would be some potential for temporary views of upper level works occurring to the western end of the site being visible above the site's hoarding. While the surrounding tree cover largely restricts views of works across the wider site, with some visibility of upper crane arms above these treelines. The effect would be Slight-Not significant, adverse and temporary to short term. | |
| ***Operational Phase*** | The Proposed Development is visible in the middle of the view and behind the Mary McAleese Bridge. About three pitched roofs of the proposed residences are visible the existing tree line with a further approximately four buildings front profiles along the site's western boundary visible. The bases of this group of houses are partially screened and softened by the mix of existing trees next to the motorway and proposed street trees in front of them. | |
| | *Magnitude of Change* | **Low** |
| | *Significance of Effects* | **Slight** |
| | *Quality* | **Neutral** |

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| | | |
|---|---|---|
| | *Duration* | **Permanent** |

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**Viewpoint 8 - View south from Rathmullan Road / River Boyne pedestrian walk**

| | | |
|---|---|---|
| *Existing View* | Junction of the River Boyne walkway and the Rathmullan Road offering oblique views up the Rathmullan Road south and across the wooded banks of the site's northwestern boundary. The view is moderately scenic and is focused on the landscape of the Boyne Valley. It is viewed by people walking, cycling, running or travelling by car. There is a new path and parking area alongside the road which provides a connection to the adjoining riverside walk.<br><br>To the left of the road, the grassy verges widen towards the river giving way to a roadside ditch with a cleared area of vegetation and a mix of deciduous scrub and woodland further up the bank. A single small pylon is prominent on the cleared area.<br><br>To the right of the road, lie the subject lands. The dense scrub visible in the foreground leads to deciduous woodland (which contains some non-native species such as Lime and Beech). The mature trees enclose the views around the road, with branches overhanging the road. | |
| ***Sensitivity*** | **Medium** | |
| **Visual Impacts and Effects** | | |
| ***Construction Effects*** | The site works will be largely screened by the existing trees with the exception of the temporary works to install the roadside end of the open space pathway. | |
| ***Operational Phase*** | The Proposed Development will retain the site's existing thick band of mature trees running along the roadside boundary. The woodland will provide a thick visual buffer to the proposed open space on its southern end.<br><br>A new pathway will be provided onto the road from the proposed open space although it will utilise an existing break in the tree cover at an old field entrance, to ensure the tree cover is not affected. The new path will bring a notable increase of activity of walkers/cyclists coming/going at this point but will be similar in character to that of the activity of walkers/cyclist using the existing new greenway located on the opposite side of Rathmullan Road. As such, the visual effects are assessed to be neutral. | |
| | *Magnitude of Change* | **Low** |
| | *Significance of Effects* | **Slight** |
| | *Quality* | **Neutral** |
| | *Duration* | **Permanent** |

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### Viewpoint 9 - View south from road bridge on Hill of Rath Road

| | |
|---|---|
| *Existing View* | Road bridge across the M1 motorway with limited provision for pedestrians in an otherwise rural / peri-rural rural setting.<br><br>The view south from this viewpoint is broken by the safety barriers in the foreground but is otherwise extensive and varied and heavily dominated by the M1 motorway, its verges, infrastructure, lighting and signage. Other notable elements include the Mary McAleese Bridge, the Platin Cement Factory and factory at Rathmullan,. It is possible to see the two farm buildings located on the subject lands from here. These features sit within a landscape which is predominantly agricultural or wooded and is characterised by the gentle and elongated undulations of the fields and the criss-crossing of hedgerows that in some places contains some maturing hedgerow trees.<br><br>The urban edge of Drogheda is distinguished by the houses and their rooflines visible. The nearest estate is that of the recent Gort Mell, on Slane road south of the slip road, visible to the left over a lower section of trees bounding the motorway. Further back in the view and directly east of the development site are the Oldbridge and Riverbank residential estates The subject lands occupy a small proportion of the view in the middle distance. Some disruption to the view towards the development site is provided by motorway lighting and planting in the foreground. |
| ***Sensitivity*** | **Medium** |
| **Visual Impacts and Effects** | |
| ***Construction Effects*** | There will be some clear views of the works as the works progress through the site. Visibility of the works on the northern end will be partially buffered by the intervening trees. The effect would be Slight, adverse and temporary to short term. |
| ***Operational Phase*** | The development will be visible accommodating a moderate proportion located centrally within this broad elevated view. It would extend existing multi-home residential land-uses west to-wards the edge of the motorway, which would be perceived as the western extent of Drogheda town. The change will not affect the character of the wider landscape and is located well beneath the horizon. It responds to the existing scale and pattern of existing field patterns and landscape elements. However, it will diminish the sense of rurality experienced here, although this has already been significantly affected by the M1 motorway. |

| | |
|---|---|
| *Magnitude of Change* | **Low-Medium** |
| *Significance of Effects* | **Moderate-Slight** |
| *Quality* | **Neutral** |
| *Duration* | **Permanent** |

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**Viewpoint 10 - View south from The Square (south)**

| | | |
|---|---|---|
| *Existing View* | View west along The Square, a cul-de-sac within the Riverbank Estate, Drogheda. The Square has three-storey duplexes on its northern side which is not mirrored by development on the south side at the cul-de-sac end.<br><br>This view is aligned with the Proposed Development which would be visible at the end of the street. Almost all houses look directly onto others on the street. Towards the end of the street, there is an elevated view over a local green which takes in the wooded verges of the Rathmullan Road with part of the tree lined northernmost boundary visible to the right. Some greater views across into the site's northernmost lands will be possible through the deciduous roadside hedgerow in the winter months. | |
| ***Sensitivity*** | **Medium** | |
| **Visual Impacts and Effects** | | |
| ***Construction Effects*** | A small section of the siteworks being visible through gaps in the tree cover. The effect would be Slight-Not Significant, adverse and temporary to short term. | |
| ***Operational Phase*** | The roofscape of the Proposed Development would be partially visible in the view above the trees. However the change would not affect the character and quality of the view. | |
| | *Magnitude of Change* | **Negligible-Low** |
| | *Significance of Effects* | **Slight-Not Significant** |
| | *Quality* | **Neutral** |
| | *Duration* | **Permanent** |

**Viewpoint 11 - View west from Rathmullan Road**

| | |
|---|---|
| *Existing View* | Link road with off-road pedestrian paths on both sides and cycle path on south side. View offered towards the site is moderately scenic although most people using the route would be using the route for other purposes than to look at the view.<br><br>From the housing estate's entrance road, a proportion of the eastern slopes of the site, the existing farm buildings located on the Rathmullan Road and existing mature boundary vegetation is visible. Views towards the site transition into views of the broader, predominantly rural landscape to the west. |
| ***Sensitivity*** | **Medium** |
| **Visual Impacts and Effects** | |
| ***Construction Effects*** | The new road entrance will form the single entrance point into the site resulting in views from this point of the site traffic coming/going throughout the construction phase. There will also be upper level views of the internal works particularly within the eastern end of the site while views of the site works at ground level will be contained by the hoarding running against the site's boundaries.<br><br>The effect would be Slight to Moderate, adverse and temporary to short term. |

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| | | |
|---|---|---|
| ***Operational Phase*** | The proposed entrance crossroads of the development would be visible in the middle distance and in the middle of the view. The new entrance will be clearly visible and would break the existing tree line and woodland planting. Here there would be a new hub of activity along the new road and shared pathway, but of similar character to the two immediate existing estates.<br><br>Most of the Proposed Development would be screened by existing vegetation. While the proposed new trees within the open space by the site's entrance helps to break up views of the new housing located further west within the site. | |
| | *Magnitude of Change* | **Medium** |
| | *Significance of Effects* | **Moderate** |
| | *Quality* | **Neutral** |
| | *Duration* | **Permanent** |

**Viewpoint 12 - View SW from Tullybrook**

| | |
|---|---|
| *Existing View* | The viewpoint is located next to a new partially completed housing estate with development continuing to the right of the view which will contain other apartment blocks upon completion.<br><br>The view south towards part of the Boyne Valley and wider rural landscape beyond is partially contained by the new buildings on either side. The subject lands are partially visible in the middle distance, sloping towards the receptor at an oblique and low angle and visible from the street and residential frontages over the street. Views towards the site are softened and partly screened by the mature woodland along the Boyne Valley, which is part of the site. The rising land towards Donore and beyond forms the horizon of this view. |
| ***Sensitivity*** | **High** |
| **Visual Impacts and Effects** | |
| ***Construction Effects*** | The site works would be visible in the middle ground along the site's western boundary. This would be no different to views of the site works occurring already within the estate as it progresses southwards.<br>The effect would be Slight to Moderate, adverse and temporary to short term. |
| ***Operational Phase*** | The Proposed Development's extent is largely screened by the apartment block opposite this point. A small portion of the Proposed Development's northwestern houses will be visible to the right of the apartments.<br><br>The Proposed Development will alter a negligible proportion of the view and the horizon formed by the rising lands towards Donore will remain generally intact. This is important because it allows the landscape to swallow up the development to a greater extent and creates the sense that it complements the existing landscape scale and pattern. |

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| | | |
|---|---|---|
| | The development will introduce a new residential element into the rural view, but is reflective of the western expansion of the town and is generally in keeping with new developments locally. Generally, the change will not affect the overall visual amenity from this viewpoint – in that extensive views will still be available, but the composition of the view will change in parts.<br><br>As the building works within this estate progress to the south, new buildings may further restrict or alter these predicted outward views. Also views of the new buildings will be reduced as the new planting matures. As such, the development would have a Neutral impact. | |
| | *Magnitude of Change* | **Low** |
| | *Significance of Effects* | **Slight** |
| | *Quality* | **Neutral** |
| | *Duration* | **Permanent** |

**Viewpoint 13 - View south from N51 at Mell**

| | |
|---|---|
| *Existing View* | This viewpoint is located in a layby on the N51 between the Mell roundabout at junction 10 of the M1 and the M1 retail park. The viewpoint has no public paths leading to it.<br><br>The existing view looks out over the Boyne valley and the rising land to the south. The key feature of the view noted in Policy is the ravine which was the route of the Williamite army from their camp at Tullyallen Hill to cross the Boyne river. This historical feature is visible in the fore to middle ground, with views of the ravine protected under Views and Prospects No. 29: *Waterunder Plateau overview of Battle of the Boyne Site (Williamite Army)* of the Louth County Development Plan 2021-2027.<br>The wider landscape forms a backdrop to this view<br><br>The Mary McAleese Bridge and the M1 motorway lighting are visible and all break the horizon of this view. In front of these is the new housing at Gort Mell (part complete) off Slane Road which interrupts the wider views out to the rural landscape.<br><br>The subject lands are visible over the tree canopies of the mature woodland in the fore and along the Boyne Valley accommodating a small proportion of the existing view, immediately to the left of the Mary McAleese Bridge and towards the left of this view.<br><br>Although currently screened, during the winter months when no leaf cover, other notable elements that will be become visible through the bare tree cov-er include the Platin Cement Works on the ridge in the background and the edges of the existing Riverbank and Oldbridge Manor estates directly east of the site. |

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| | | |
|---|---|---|
| ***Sensitivity*** | **High** | |
| **Visual Impacts and Effects** | | |
| ***Construction Effects*** | The site works at the development would be limited to a small portion of the view through gaps in the intervening tree cover. The effect would be Slight – Not Significant, adverse and temporary to short term. | |
| ***Operational Phase*** | At operation, the Proposed Development will be partially visible on the backdrop of the view over and through existing vegetation.<br><br>The new housing will be low on the rising landform and will not break the horizon and will be perceived as an extension to Drogheda's urban edge alongside the Riverbank and Oldbridge Manor residential estates. Changes will not detract from the key focus of the protected viewpoint and will not change the overall character or level of visual amenity afforded from this viewpoint. The new housing of Gort Mell will be clearly separate from the newly built housing of the Proposed Development, with the former remaining dominant within this view due to its closer proximity to the viewer and ravine. As such, the impact of the changes occurring in this view during the operational phase is expected to be neutral. | |
| | *Magnitude of Change* | **Low** |
| | *Significance of Effects* | **Slight** |
| | *Quality* | **Neutral** |
| | *Duration* | **Permanent** |

### *11.5.2.5 Summary of Visual Effects*

The following tables summarise the results of the assessment of the effects of the Proposed Development on the visual resource during the construction and operational phase.

*Table 11-11: Summary of Visual Effects – Construction Phase*

| VP Ref. | Location | Sensitivity | Degree of Change | Significance Quality | Duration |
|---|---|---|---|---|---|
| **1** | View NE from Sheephouse Road bridge | Medium | Negligible | Not Significant Adverse | Temporary to short term |
| **2** | View NE over gate to the west of cluster of homes on Sheephouse Road | Medium | Negligible | Not Significant Adverse | Temporary to short term |
| **3** | View NE from Donore cemetery | High | Low | Slight Adverse | Temporary to short term |
| **4** | View east from Battle of the Boyne viewpoint, Oldbridge | High | Negligible | Not Significant Adverse | Temporary to short term |
| **5** | View SE from the driveways of Bloomsbury Cottage and 'Bouvinda' | High | No change | No effects | NA |

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| VP Ref. | Location | Sensitivity | Degree of Change | Significance Quality | Duration |
|---|---|---|---|---|---|
| **6** | View SE from Battle of the Boyne visitor centre hub | High | No change | No effects | NA |
| **7** | View SE from Drybridge House | Low | Negligible-Low | Slight-Not Significant Adverse | Temporary to short term |
| **8** | View S from the Boyne River walkway on Rathmullan Road | Medium | Negligible | Not-Significant Adverse | Temporary |
| **9** | View south from road bridge on Hill of Rath Road | Medium | Low | Slight Adverse | Temporary |
| **10** | View south from The Square (south) | Medium | Negligible-Low | Slight-Not Significant Adverse | Temporary |
| **11** | View west from Rathmullan Road | Medium | Low- Medium | Slight to Moderate Adverse | Temporary |
| **12** | View S from Tullybrook Housing | High | Negligible | Not Significant Adverse | Temporary |
| **13** | View south from N51 at Mell | High | Negligible- Low | Slight-Not Significant Adverse | Temporary |

*Table 11-12: Summary of Visual Effects – Operational Phase*

| VP Ref. | Location | Sensitivity | Degree of Change | Significance Quality | Duration |
|---|---|---|---|---|---|
| **1** | View NE from Sheephouse Road bridge | Medium | No change | No effects | NA |
| **2** | View NE over gate to the west of cluster of homes on Sheephouse Road | Medium | No change | No effects | NA |
| **3** | View NE from Donore cemetery | High | Low | Moderate Neutral | Permanent |
| **4** | View east from Battle of the Boyne viewpoint, Oldbridge | High | Negligible | Not Significant Neutral | Permanent |
| **5** | View SE from the driveways of Bloomsbury Cottage and 'Bouvinda' | High | No change | No effects | NA |
| **6** | View SE from Battle of the Boyne visitor centre hub | High | No change | No effects | NA |

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| VP Ref. | Location | Sensitivity | Degree of Change | Significance/ Quality | Duration |
|---|---|---|---|---|---|
| **7** | View SE from Drybridge House | Low | Low | Slight Neutral | Permanent |
| **8** | View S from the Boyne River walkway on Rathmullan Road | Medium | Low | Slight Neutral | Permanent |
| **9** | View south from road bridge on Hill of Rath Road | Medium | Low-Medium | Moderate-Slight Neutral | Permanent |
| **10** | View south from The Square (south) | Medium | Negligible-Low | Slight-Not Significant Neutral | Permanent |
| **11** | View west from Rathmullan Road | Medium | Medium | Moderate Neutral | Permanent |
| **12** | View S from Tullybrook Housing | High | Low | Slight Neutral | Permanent |
| **13** | View south from N51 at Mell | High | Low | Slight Neutral | Permanent |

#### *11.5.2.6 Potential Cumulative Visual Effects*

The Proposed Development is part of the wider expansion of Drogheda town in this area and part of the lands zoned for residential which will result in future changes to local views as areas of agricultural lands become gradually replaced by various built development types according to their zoned land uses. These visual changes are currently occurring where various recent approved housing developments have been partially complete/occupied but have remaining areas of lands that are still currently being built out. This can be seen in Viewpoint 12 and 13, where these views have changed since the previous application in 2023 as a result of increased housing building works within the immediate environs of these viewpoints.

There are no other pending or approved but not-constructed developments within the immediate area that could have any notable cumulative visual effects.

Thus, the cumulative visual effects would be: **None**.

### 11.5.3 "Do Nothing" Effect

If the Proposed Development was not to proceed, it is assumed that the site lands rural lands would continue to be farmed and the field boundaries maintained as part of this farm's ongoing management.

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## 11.6 Avoidance, Remedial & Mitigation Measures

Mitigation measures aim to avoid, reduce, and remedy or offset negative or adverse effects on the environment caused by the Proposed Development as identified above and to reinforce the positive impacts of the proposed development.

### 11.6.1 Construction Phase

During construction, there will be a notable change to the land use and activity on the site, that is likely to generate negative visual impacts for residents in, and visitors to, areas adjacent to the site. All construction works will seek to minimise disturbance to landscape and visual receptors of the site and wider area through the implementation of appropriate measures in line and detailed within the Construction Environmental Management Plan (CEMP).

Measures to be taken include:

- The remedial measures proposed revolve around the implementation of appropriate site management procedures – such as the control of site lighting, storage of materials, placement of compounds, delivery of materials, car parking, etc. Visual impact during the construction phase will be mitigated somewhat through appropriate site management measures and work practices to ensure the site is kept tidy, dust is kept to a minimum, and that public areas are kept free from building material and site rubbish.
- The existing trees and hedgerow to be retained through the site will be protected by installation of temporary fencing in accordance with BS5837:2012: Trees in Relation to Construction around the root protection areas (RPAs) as per the protective measures set out in the arborist's Arboricultural Impact Assessment (AIA) & Method Statement and associated drawings.
- Site hoarding will be appropriately scaled, finished and maintained for the period of construction of each section of the works as appropriate. To reduce the potential negative impacts during the construction phase good site management and housekeeping practices will be adhered to. The visual impact of the site compound and scaffolding visible during the construction phase are of a temporary nature only and therefore require no remedial action other than as stated above.
- The temporary elements of the site works including site hoarding, site compound and construction access routes will be removed as these become no longer required as the construction works progress and the affected land reinstated into the overall design landscape scheme so that there is no remnants of these works evidence within the site.

Adverse impacts during construction will be short-lived and superseded by the completed new development.

### 11.6.2 Operational Phase

The design of the Proposed Development incorporates significant consideration in respect of best practice layouts and for successful integration into the receiving environment. The architectural layout aims to address visual impacts by proposing variety in scale and massing of buildings. Elevations and materiality complement local styles and character.

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Landscape measures necessary for the creation of a development of quality are proposed with the effect of also avoiding or minimising adverse effects generated due to the Proposed Development. These landscaping measures, as incorporated into the landscape masterplan and Landscape Strategy & Design Report produced by CSR and included in the support documentation of this application, include:

- Retention of the maximum amount of the existing mature tree cover & hedgerow (7280m²), a crucial part of the overall concept to the landscape scheme, which acts as a strong visual buffer for the development from the Boyne greenway. The combination of this retained vegetation and the proposed new planting will help strengthen the existing wider green infrastructure links and enhance the local biodiversity of the site.
- The proposed planting of substantial tree cover through the site's open space and internal roads will help enhance the Proposed Development and to compensate for the necessary removal of existing hedgerow (198lm) and tree and vegetation (498m²) for the site works.
- Incorporating a mix of native and non-native species throughout the scheme to create a dynamic and resilient landscape and provide pollinator friendly planting for biodiversity.
- Provision of high-quality design of the open spaces which include for the integration of the existing retained woodland boundary vegetation, landscaped SUDs features, and allowing connectivity from the development out to the western end of Drogheda town and the Boyne River walkway.
- Best practice horticultural methods will be applied to ensure that mitigation measures establish and grow appropriately. Landscape tender drawings and specifications will be produced to ensure that the landscape work is implemented in accordance with best practice. This document will include tree work procedures, soil handling, planting and maintenance.

In conclusion, mitigation is adequately delivered as an integral part of the design of the Proposed Development, without the need for further mitigation measures to address residual landscaped and visual effects.

### 11.6.3 "Worst Case" Scenario

The 'worst-case' scenario would be if the Proposed Development failed to safeguard any of the existing valued landscape features or was laid out in a way that failed to respond to surrounding landscape and townscape character, scale, sensitivities and views. Similarly, if the Proposed Developments are approved but failed to integrate proposed green infrastructure and if the positive attributes of the design and mitigation measures were not carried through in full or enforced by the Local Authority.

## 11.7 Residual Effects

Following the implementation of the Proposed Development and the above mitigation measures the residual effects will be the same as those described above in the landscape and visual assessment in **Sections 11.5.1** and **11.5.2** above.

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## 11.8 Monitoring

### 11.8.1 Construction Phase

The contract works will be supervised by a suitably qualified landscape architect.

The planting works will be undertaken in the next available planting season after completion of the main civil engineering and building work.

### 11.8.2 Operational Phase

This will consist of weed control, replacement planting, pruning etc. All landscape works will be in an establishment phase for the initial three years from planting. Any of the installed planting which fails within this initial three years period to be replaced with similar by the appointed landscape contractor. The company or public agency responsible for site management of the scheme will be responsible for the ongoing maintenance of the site after this three-year period is complete.

## 11.9 Interactions

The pertinent environmental interactions for landscape and visual are with:

Chapter 4: Population & Human Health

Chapter 5: Biodiversity

Chapter 6: Land & Soil

Chapter 12: Archaeology and Cultural Heritage

Chapter 13: Material Assets - Traffic & Transport.

In the preparation of Population & Human Health (Chapter 4), regard has been had to results of the LVIA, as impacts on landscape and visual amenity can in turn negatively affect residential amenity in affected areas.

The landscape proposals, through discussions with the project ecologists seek to compensate for any necessary loss of habitat (see Chapter 5), through compensatory planting of a mix of suitable trees and other plants which include both native and non-native species that are pollinator friendly in order for the scheme to achieve an overall net ecological gain.

The areas rich Archaeology and Cultural Heritage (see Chapter 12) assets within the Boyne Valley have been considered as part of initial and final viewpoint selection processes. A number of the above viewpoints (VP no. 3,4,5 and 6) were selected as representative of views experienced by heritage assets. Photomontages were then produced from these viewpoints to help determine if the Proposed Development would have any potential visibility and possible impacts upon these heritage asset settings.

The potential interaction with Land and Soils (Chapter 6) will occur during the construction phase with movement of material through/off the site and its temporary storage on site. The landscape proposals will seek to reuse the excavated soil and subsoil materials where possible for the areas of new planting and profiling the lands. Further details of the extents of soils to be retained and removed from site can be found within Chapter 6 of this EIAR.

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The potential for interaction with Traffic & Transport (Chapter 13) will include impacts upon the landscape character and visual amenity as a result of changes to the existing traffic levels (walkers/cyclist/vehicles) within the immediate surroundings during the initial construction and later operational phases.

No significant landscape and visual interactions are predicted in relation to any of the above-listed factors.

## 11.10 Difficulties Encountered When Compiling

No difficulties were encountered during the preparation of this chapter.

## 11.11 Conclusion

This LVIA has assessed the impact and effects of the Proposed Development at the application site. A high-quality proposal has been submitted that adheres to local planning policy and is designed to reflect best practice and guidance. The design process has incorporated measures that integrate the Proposed Development into its setting and have contributed towards the broadly benign assessment described above with no significant effects identified.

## 11.12 References

Louth County Council (2024) Consolidated Louth County Development Plan 2021-2027(incl. variations 1 & 2) : Louth County Council. https://www.louthcoco.ie/en/publications/development-plans/louth-county-development-plan-2021-2027/consolidated-louth-county-development-plan-2021-2027-incl-variations-1-2-.html

Louth County Council Planning Enquiry (Online Search Facility) https://www.eplanning.ie/LouthCC/SearchTypes

Meath County Council (2025) Consolidated Meath County Development Plan 2021-2027 (incl. Variations 1,2 & 3) Navan: Meath County Council. https://consult.meath.ie/en/consultation/consolidated-meath-county-development-plan-2021-2027-incl-variations-1-2

Meath County Council Planning Enquiry (Online Search Facility) https://www.eplanning.ie/MeathCC/searchtypes

Department of Housing, Local Government and Heritage (DHLGH) (2021) National Land scape Strategy 2014-2025 Dublin: DHLGH. https://www.gov.ie/en/publication/8a59b-national-landscape-strategy/

Environmental Protection Agency (EPA) (2022). Guidelines on the Information to be Contained in Environmental Impact Reports (EIAR). Environmental Protection Agency, Wexford. https://www.epa.ie/publications/monitoring--assessment/assessment/guidelines-on-the-information-to-be-contained-in-environmental-impact-assessment-reports-eiar.php

Landscape Institute and the Institute of Environmental Management and Assessment (2013) Guidelines for Landscape and Visual Impact Assessment, 3rd edition, London: Routledge.

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Landscape Institute (2024) Notes and Clarifications on aspects of the GLVIA3 London: Landscape Institute. https://www.landscapeinstitute.org/technical-resource/notes-and-clarifications-on-aspects-of-the-3rd-edition-guidelines-on-landscape-and-visual-impact-assessment-glvia3-litgn-2024-01/

Landscape Institute (2019) Visual Representation of Development Proposals, London: Landscape Institute. https://www.landscapeinstitute.org/visualisation/

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# 12 ARCHAEOLOGY AND CULTURAL HERITAGE

## 12.1 Introduction

This chapter outlines the Archaeological, Architectural and Cultural Heritage issues with respect to the proposed Large-scale Residential Development at Rathmullan, Co. Meath (Figure 12-1; centered on O06125 75058).It considers the various categories of special interest as defined by the statutory heritage guidelines.

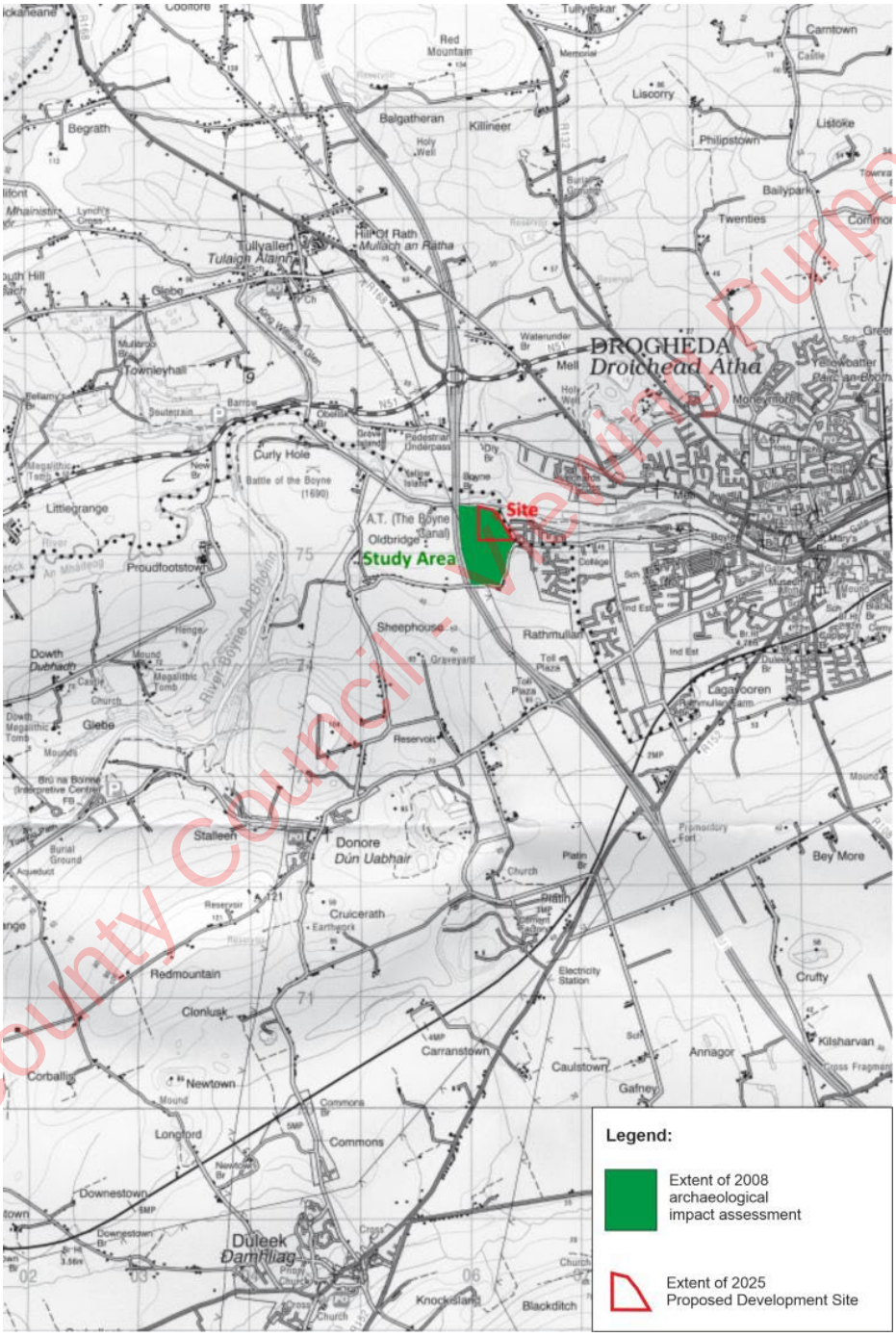



*Figure 12-1 Site Location and Location of Study Area on OS Discovery Series 1:50,000 map*

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This study aims to assess the baseline architectural and archaeological heritage in the area in and around the Proposed Development site, the potential significance and sensitivity of the existing built environment, and to evaluate the likely and significant effects on the built heritage of the surrounding area resulting from the Proposed Development.

The aim of this chapter is to assess the baseline Archaeological, Architectural and Cultural Heritage conditions of the surrounding environment for the Proposed Development, in order to determine any significant effects that may arise as a result of the Proposed Development and highlight any potential effects this may have on these resources. In addition, mitigation measures are recommended, in accordance with the policies of Meath County Development Plan 2021-2027.

The applicant is seeking planning permission from Meath Country Council for the Proposed Development site at Rathmullan Road, Oldbridge, Drogheda, Co. Meath.

A comprehensive description of the Proposed Development is presented in Chapter 2 of this EIAR.

### 12.1.1 Quality Assurance and Competency of Experts

This chapter has been prepared by Eoin Halpin, Operations Manager with Archaeology and Heritage Consultancy Ltd (AHC). Mr Halpin graduated from University College Dublin with an Honours Degree in Archaeology in 1982, He is a member of the Chartered Institute for Field Archaeologists and a member of the Institute of Archaeologist of Ireland, for which he has acted as chairperson. He has over 35 years of experience, working on all aspects of development-led archaeological projects including large scale infrastructural projects, such as various Transport Infrastructure Ireland road schemes and gas pipeline projects.

## 12.2 Study Methodology

- This assessment determines, as far as reasonably possible from existing records, the nature of the Cultural Heritage resource within the footprint and the vicinity of the Proposed Development using appropriate methods of study and leads to the following:
- Determining the presence of known archaeological and built heritage sites that may be affected by the Proposed Development;
- Assessment of the likelihood of finding previously unrecorded archaeological remains during the construction programme;
- Determining the effect (direct/indirect) upon the known Cultural Heritage sites in the surrounding area (receiving environment);
- Identifying mitigation measures based upon the results of the above research; and
- Describing the residual effect on the archaeological, architectural and Cultural Heritage resource.

Research for this assessment has been undertaken in five phases. The first phase comprised a paper survey of publicly available archaeological, architectural, historical and cartographic sources, which was undertaken by Mark Moraghan of Archaeological Development Services Ltd (ADS) in 2007 in advance of the original proposal for the site (under Reg. Ref. SA60260) and updated where necessary in 2025. The second phase involved field walking the site the proposed development site, to verify the paper search results and ensure that there were no previously unrecorded archaeological, historical or

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architectural sites that are likely to be affected by the proposal. The initial site visits took place in 2007 and were followed up by further visits in July and August 2018, February 2019, June 2022, February 2023 and August 2025.
The third phase involved a comprehensive geophysical survey which included the present site (Figure 12-12), as recommended in the 2007 impact assessment (J.M Leigh Surveys under license 07R0190). The fourth phase involved an extensive testing programme carried out in 2008 by Ros O'Maolduin of ADS under licence 08E0506, which involved the excavation of 99 test trenches across a wider area, including the Proposed Development site (Figure 12-12). The final phase involved a re-examination of the work undertaken thus far and the compilation of the present chapter.

### 12.2.1 Guidance and Legislation

This assessment has been undertaken having regard to general EIA guidance and the following legislation and guidelines were also consulted as part of the assessment.

- National Monuments Act 1930 to 2014;
- The Planning and Development Acts 2000 to 2025;
- Planning & Development Regulations 2001–2025;
- Heritage Act, 1995, as amended;
- Heritage Act 2018;
- Frameworks and Principles for the Protection of the Archaeological Heritage, 1999, (formerly) Department of Arts, Heritage, Gaeltacht and Islands;
- Architectural Heritage (National Inventory) and Historic Monuments (Miscellaneous Provisions) Act, 1999 and the Local Government (Planning and Development) Acts 2000–2018; and
- EPA 'Guidelines on the Information to be Contained in Environmental Impact Assessment Reports' (EPA, May 2022)

### 12.2.2 Study Area

The archaeological, architectural and Cultural Heritage receiving environment is defined as an area measuring some 1 km from the Proposed Development Site It is recognised that the 1 km study area creates an arbitrary line within which to consider effects and so the topography, elevation and landform around the site was also considered in order to adjust / augment this study boundary as and where deemed necessary. For example the study area extended some 4 km to the north to include Red Mountain and its associations with the Battle of the Boyne and extended to some 2 km to the southwest to include the cluster of archaeological and historical site situated on Donore Hill.

### 12.2.3 Site Visits

Field inspection is necessary to determine the extent and nature of archaeological and architectural remains and can also lead to the identification of previously unrecorded or suspected sites and portable finds through topographical observation and local information. A site survey of the proposed development site and the adjoining areas was carried out in 2006, as noted in the original Impact Assessment (Moraghan 2008), and also in July and August 2018, February 2019, June 2022, February 2023 and August 2025 in an attempt to identify any known cultural heritage sites and previously unrecorded features, structures and portable finds within the proposed development area. Photographs from within the site and

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of views of the adjoining structures were taken in order to determine and illustrate any potential visual effects. These visits entailed:

- Noting and recording the terrain type and land usage;
- Noting and recording the presence of known and previously unknown features of archaeological, architectural or Cultural Heritage significance;
- Verifying the extent and condition of recorded sites and structures (RMPs/ RPS/ National Inventory of Architectural Heritage ( NIAH); and
- Visually investigating any suspect landscape anomalies to determine the possibility of their being anthropogenic in origin and of archaeological, architectural or Cultural Heritage significance.

### 12.2.4 Consultation

Following the initial research, a number of statutory and voluntary bodies were consulted to gain further insight into the cultural background of the receiving environment and study area, as follows:

- Correspondence with the Development Applications Unit of Department of Culture, Heritage and the Gaeltacht (DCHG), in March 2019 regarding the Rathmullan Large-scale Residential Development (LRD); and
- Meeting with representatives of the National Monuments Service in July 2019 and again in August 2025, to discuss the proposed mitigation measures. The recommended strategy, was deemed to be appropriate in this regard.

### 12.2.5 Paper survey

A paper survey is a document search undertaken as part of the desktop study of the baseline data. The following sources were examined and a list of areas of archaeological, architectural and Cultural Heritage potential was compiled:

- Record of Monuments and Places for County Meath;
- Sites and Monuments Record (SMR) for County Meath;
- National Monuments in State Care Database;
- Preservation Orders List;
- Topographical files of the National Museum of Ireland (NMI);
- Cartographic and written sources relating to the study area;
- Meath County Development Plan 2021-2027;
- Aerial photographs;
- Excavations Bulletin (1970−present);and
- National Inventory for Architectural Heritage.

Further information is provided in Volume 3 Appendix 12.1on the key data sources.

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### 12.2.6 Geophysical Survey

Geophysical surveys are used to create 'maps' of subsurface archaeological features. Features are the non-portable part of the archaeological record, whether standing structures or traces of human activities left in the soil. Geophysical instruments can detect buried features when their electrical or magnetic properties contrast measurably with their surroundings. In some cases, individual artefacts, especially metal, may be detected as well. Readings, which are taken in a systematic pattern, become a dataset that can be rendered as image maps. Survey results can be used to guide excavation and to give archaeologists insight into the pattern of non-excavated parts of the site. Unlike other archaeological methods, the geophysical survey is not invasive or destructive.

A geophysical survey was undertaken to inform this assessment in June 2008, by J.M. Leigh Surveys, within the Proposed Development area under licence 07R0190 (see Figure 12-12 for a summary of the results).

### 12.2.7 Archaeological Test Trenching

Archaeological Test Trenching can be defined as '*a limited programme... of intrusive fieldwork which determines the presence or absence of archaeological features, structures, deposits, artefacts or ecofacts within a specified area or site on land or underwater. If such archaeological remains are present test trenching defines their character and extent and relative quality*' (CIFA 2014a, 4).

A program of archaeological testing based on the results of the geophysical survey was carried out in the Proposed Development area in 2008. This was undertaken by Ros O'Maolduin of ADS, under licence 08E0506. A summary of the testing report is presented in Section 12.3 (see also Figure 12-12).

### 12.2.8 Impact Assessment Methodology

In order to assess, distil and present the findings of this study, the following definitions apply:

- 'Cultural Heritage' where used generically, is an over-arching term applied to describe any combination of archaeological, architectural and Cultural Heritage features, where;
- The term 'archaeological heritage' is applied to objects, monuments, buildings or landscapes of an (assumed) age typically older than AD 1700 (and recorded as archaeological sites within the Record of Monuments and Places);
- The term 'architectural heritage' is applied to structures, buildings, their contents and settings of an (assumed) age typically younger than AD 1700;
- The term 'Cultural Heritage', where used specifically, is applied to other (often less tangible) aspects of the landscape such as historical events, folklore memories and cultural associations. This designation can also accompany an archaeological or architectural designation or describe features that have a more recent origin, but retain Cultural Heritage significance; and
- For the purposes of this chapter the terms 'architectural heritage' and 'built heritage' have the same intended meaning and are used interchangeably.

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The Impact Definitions identified in Section 3.7 of the 'Guidelines on the Information to be Contained in Environmental Impact Assessment Reports' (EPA 2022) are used.

## 12.3 The Existing and Receiving Environment (Baseline Situation)

The underlying geology consists of glacial gravels forming the sub-strata. A local fault line has formed a deep gully which bounds the site to the northeast, as shown in Figure 12-2.

The Proposed Development Site is bounded by green fields and the M1 motorway beyond to the west, green fields to the north, by the Rathmullan Road along its eastern side and currently green fields to the south. The northern extent of the site runs steeply down into the valley of the River Boyne. The eastern side of the site is further defined by a narrow ravine, known locally as Pass-if-you-can or Pass, which is steep sided and gives out at its upper, southern end onto the relatively flat ground of Rathmullan and Sheephouse, rising eventually to Donore hill to the southwest.

There are fine commanding views to the north towards Tullyallen, with Louth Hill (116 m OD) to the northwest and Red Mountain (134 m OD) to the northeast, forming the high ground on the north bank of the river (Volume 3 Appendix 12.2, Plate 12.1). There are no views of the River Boyne from the site, which flows through a steep sided gorge, at least on the south bank, immediately to the north of the Proposed Development site. The modern Mary McAleese Bridge to the northwest, marks the line of the river.

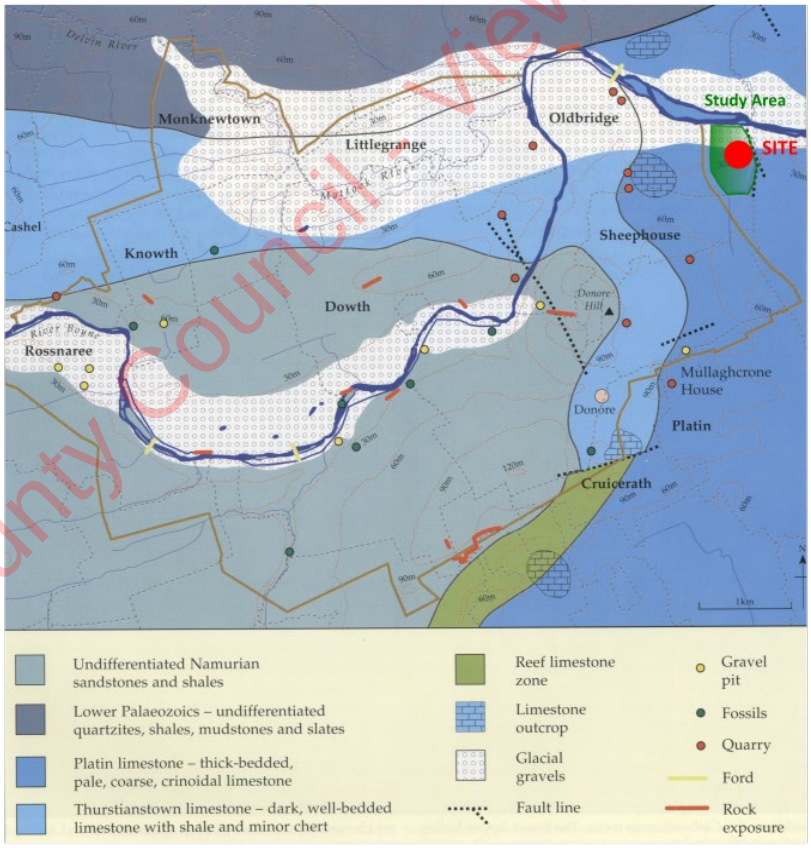



*Figure 12-2 Underlying Geology in Area of the Proposed Development Site (Stout, 2002)*

To the east, views are blocked by mature trees running along the Rathmullan to Sheephouse Road, with relatively flat ground of Rathmullan townland beyond. This flat

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ground was developed in 2017 consisting of the construction of 156 dwelling houses, crèche and associated ancillary development works. The development also involved the removal of the existing hedge row on the east side of Pass, at its southern end, replacing it with a new footpath and concrete wall surmounted by railings (Volume 3- Appendix 12.2, Plate 12.2).

To the west, the views are now largely blocked by the maturing planting associated with the opening of the M1, Drogheda by-pass, in 2003 (Volume 3- Appendix 12.2, Plate 12.3).

To the south, the ground rises gently away from the river valley, but has two local high spots, the first is surmounted by Donore church and graveyard (83 m OD) which is located to the south of the development lands (Volume 3- Appendix 12.2, Plate 12.4) and a second hill, known locally as Donore Hill (104 m OD), is located to the southwest.

### 12.3.1 Description of the Current Archaeological Environment within the Proposed Development Site

The Proposed Development site was inspected in July and August 2018, February 2019, June 2022, February 2023 and August 2025. The study area including the Proposed Development site was examined for the presence of topographical anomalies – features that might indicate the presence or remains of earthworks of archaeological value. The ground surface was examined for the presence of archaeological artefacts. In addition, the surrounding area was examined to assess potential effects to and from the site.

At the time of the most recent site visit in August 2025, the field which comprises the Proposed Development Site, had recently been harvested, with low stubble across the entire area (Volume 3 - Appendix 12.2, Plate 12.5).

The northern field extends to some 3.7 ha in size. It slopes considerably downwards towards the River Boyne. Nothing of Cultural Heritage interest was identified in this field during the site inspection, however, the Sites and Monuments Record (SMR) database, records the north western part of this field as the location of a sub soil cut enclosure (ME020-088----) of Middle Bronze Age date, c.1500BC, which was uncovered in the archaeological testing undertaken in 2008 under licence 08E0506 (a summary is presented in Section 12.3). This monument lies outside the boundaries of the Proposed Development site.

The second field, immediately to the south is some 6.8 ha in extent and slopes relatively gently from south to north. Near the southern field boundary, almost on the highest point of the field, a slight depression was visible that was circular in shape and measured approximately 20 – 22 m in diameter. The landowner has described this depression as a 'wet hollow' that had been filled with topsoil following its appearance during construction works for the M1. It is likely that this is the same feature which was noted on the LiDAR survey (Figure 12-10) and recorded on the SMR as ME020-072----, however the archaeological testing in 2008 proved this site to be modern in origin and non-archaeological (Moraghan 2008 p115).

There is a cluster of farm buildings surviving in the southeast corner of this field opposite the Sheephouse Road / Rathmullan Road junction. It consists mainly of modern corrugated iron-roofed sheds and concrete animal pounds (Volume 3- Appendix 12.2, Plate12.6).

However, within the southern range of buildings, very badly disturbed and modified by later construction, are the remains of at least one older building, the western gable of which survives reasonably well. The gable wall is some 1 m in thickness and built of rough stone

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and mortar (Volume 3- Appendix 12.2, Plate 12.7). It stands to a height of roughly 4 m, with a window, splayed on the interior, still surviving. The wall fragment has a modern corrugated iron-roof built on it and is backed to the south by a concrete wall.

A second section of old wall, albeit in a much poorer state of preservation, is located some 15 m to the east of the surviving gable (Volume 3 -Appendix 12.2, Plate12.8). This short, 3 m long and 1.5 m high length, probably formed the original south wall of the building. Like the gable end, this wall is constructed from rough stone and mortar and is some 1 m in thickness. These buildings appear on William Larkin's map of 1812 and the Ordnance Survey map of 1837 and must therefore predate this, dating this cluster to at least the early 19th century.

The Proposed Development site lies within the area of the wider Battle of the Boyne site, however, there are no certain upstanding remains recorded associated with the battle, notwithstanding a number of unidentified 'ferrous' items which came to light in the course of testing, licence 08E00506, on the site, some of which could be military in origin.

In addition to the ferrous objects, a series of isolated pits and linear gullies were uncovered in the testing with particular concentrations across the southern field, where a number of cremations and a possible ring ditch were noted. The location of a UNESCO World Heritage Site Buffer Zone in relation to the Proposed Development site is displayed below in Figure 12-3.

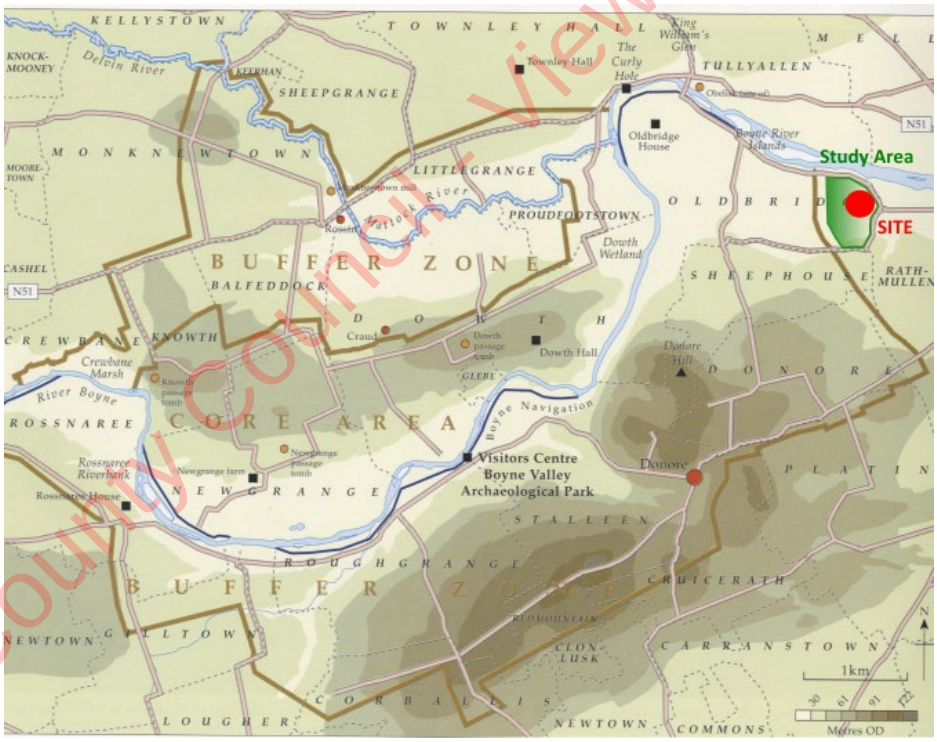



*Figure 12-3 Location of UNESCO World Heritage Site Buffer Zone in relation to Proposed Development Site (Stout, 1997)*

### *12.3.2 Description of the Current Archaeological Environment in the Wider Landscape*

The landscape beyond the Proposed Development site is particularly rich. Perhaps most significantly is the World Heritage Site (UNESCO Ref No 659) – *Brú naBóinne* -

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Archaeological Ensemble of the Bend of the Boyne, the buffer zone for which runs along the west side of the motorway some 150 m from the western boundary of the Proposed Development site (Figure 12-3). The Bend of the Boyne complex was inscribed on the World Heritage List in 1993 having been judged to have met three of the six criteria for Cultural Heritage of outstanding universal value. The three criteria were: representing a masterpiece of human creative genius; bearing a unique or at least exceptional testimony to a cultural tradition or to a civilisation whichis living or which has disappeared; being an outstanding example of a type of building, architectural or technological ensemble or landscape which illustrates significant stage(s) in human history.

The core area of the World Heritage Site, which lies at its closest some 2.5km to the west, comprises approximately 780ha. contained within the bend of the River Boyne. The surrounding buffer zone, comprising approximately 2,500ha., extends to the River Mattock in the north, includes the River Boyne itself and to the south extends to the ridgeline of an escarpment that overlooks the core area. The boundaries of the buffer zone were set having taken into account views into and out of the core area. The Proposed Development site falls outside the buffer zone.

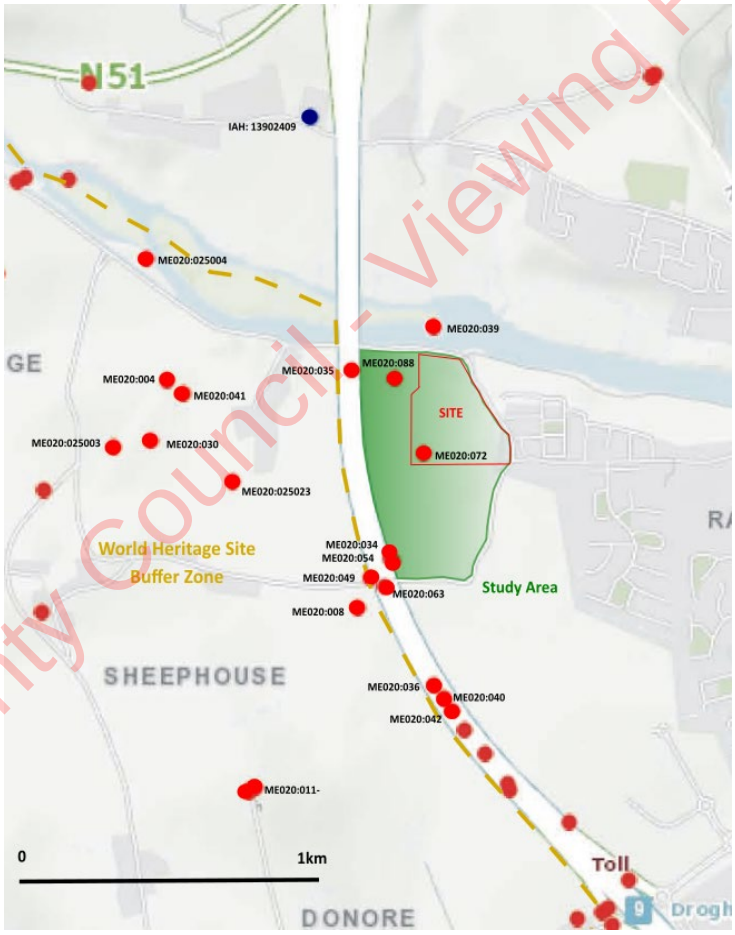



*Figure 12-4 Sites of Cultural Heritage Interest in the Vicinity of the Proposed Development Site (Map from SMR on line data base)*

In addition to the archaeological landscape associated with the World Heritage Site, a number of sites of archaeological interest were noted on the SMR in the vicinity (Figure 12-4 and Volume 3- Appendix 12.3). In the course of the construction of the M1 motorway immediately to the west of the Proposed Development site, four sites were uncovered.

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These consisted of a small flint scatter (ME020-035----), a spread of isolated archaeological features (ME020-049----), an undated archaeological complex of inter-cut features (ME020-054----) and finally a kiln site (ME020-063----). Further afield to the south in Donoretownlanda pre-historic enclosure with associated activity was found (ME020-036----) and a short distance to the south a Bronze occupation site was uncovered (ME020-040----).

Apart from archaeological sites uncovered as part of the motorway construction, there are two Bronze Age standing stones noted in a field some 650m to the west (ME020-041---- and ME020-030----) with a ring ditch also noted in the vicinity of the stones (ME020-025003-).

The later pre-historic period is not particularly well represented in the vicinity of the Proposed Development site, neither is the early historic period, apart that is from an enigmatic site discovered in the course of the works undertaken in advance of the North-South Gas Pipeline, which ran immediately west of the M1 motorway (Figure 12-5 below). Here in the northeast corner of the field immediately to the south of the Sheephouse Road, a large feature, defined by two concentric ditches was recorded in the course of a geophysical survey, which together enclosed a roughly circular area some 75 m in diameter (ME020-008----). It is possible that this might be the site of the rath, or Early Medieval farmstead, which gave its name to nearby townland of Rathmullan




*Figure 12-5 Location of Geophysical Anomaly ME020:008 to the SW of the Study Area*

In addition to the possible rath site, there is a souterrain (ME020-004----), located some 600 m to the west of the Proposed Development site. The souterrain consists of a Y-shaped, dry stone-built underground passage, with a cumulative length of 6.5m, with each prong ending in a beehive chamber.

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By the 12th century, the area of the Proposed Development site was subsumed into the lands of the Cistercians who had founded their abbey at Melifont in 1142 on the banks of the Mattock River, 5.5km to the northwest. They subdivided their estate into granges or outlying farms, leading to the names of Newgrange, Roughgrange, Sheepgrange and Littlegrange. The area of the Proposed Development site remained under the control of the Cistercians until the dissolution of the monasteries in the mid-16th century.

The Medieval period is also represented by the remains of a church and graveyard, some 850 m to the south of the Proposed Development site, on top of the hill at Donore (ME020-011----). The church was listed in the ecclesiastical taxation of Pope Nicholas IV dated 1302-06, however, the presence of a cross on the site might indicate an earlier date for its foundation.

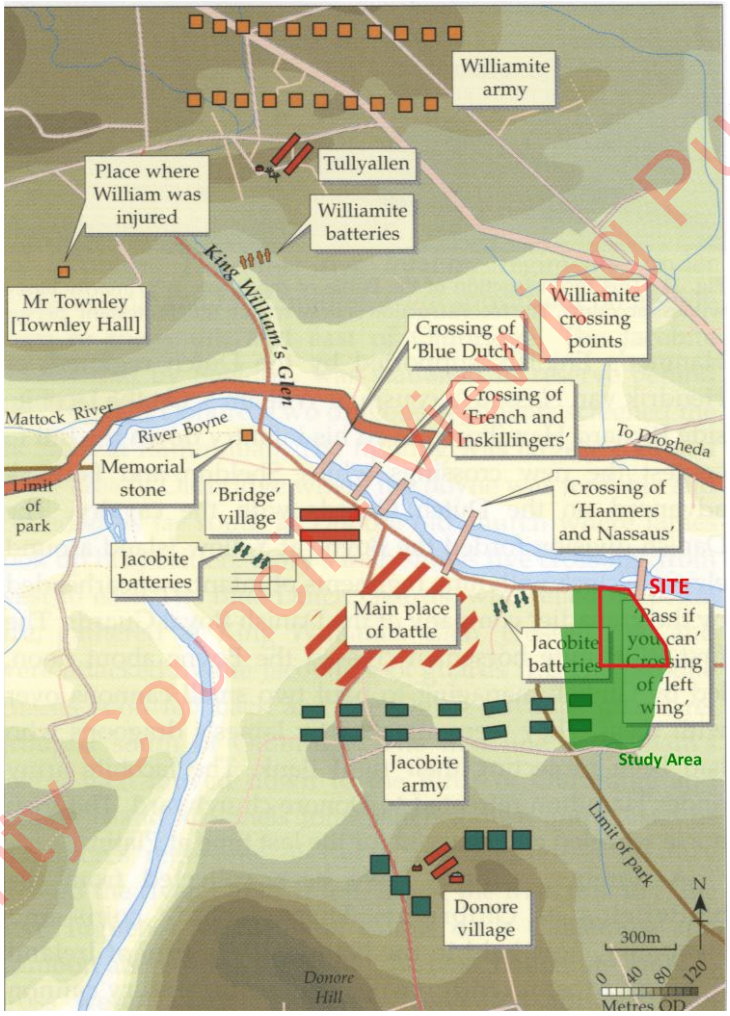



*Figure 12-6 Battle of the Boyne with Location of Proposed Development Site Indicated (Stout, 2002, p.118)*

Although there were a number of battles along the Boyne, for example during the Confederate Wars of 1641-49, by far the most historically important was the Battle of the Boyne (ME020-025----) between the forces of William of Orange and James II, which took place in July 1690 (Figure 12-6). Considerable archaeological and historical work has been undertaken to identify archaeology associated with the battle (Cooney et at. 2002). The opening of the Battle of the Boyne heritage centre at Oldbridge Estate is a testament to this work, which has identified the 'core' of the Battle of the Boyne to an area immediately east of

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the entrance to the estate. The battle however spread some considerable distance from the main site of the fighting. The Williamite, Meinhard Schomberg, crossed the river at Rossnaree, some 6.3km upstream to the west, while William himself crossed the river at Mill Ford (ME020-034---), some 1.5km downstream to the east of the core area of the battle.

It is this crossing at Mill Ford which is important to the present proposal. The fording point is located at the river immediately to the north of the Proposed Development site. William approached the ford from the north, down a narrow gully known as Drybridge, accompanied by mounted troops, which included the Enniskilleners cavalry and dragoons. This manoeuvre was spotted by Jacobite mounted piquets who were positioned on the high ground overlooking the crossing, which is now the field at the north end of the Proposed Development site. The piquets engaged and also raised the alarm, but by the time any Jacobite counteraction could be mounted, William and his troops were across the river relatively unopposed and advancing up the ravine, Pass-if-you-can.

An eyewitness, Dumont De Bostaquet, recorded the events of the crossing: 'We arrived at the edge of the river through a narrow defile (Drybridge) which could only be entered in single file; we passed through it swimming because the tide was quite high. The enemy had some cavalry on the riverbank who could not hold out against our Danish regiment....So with no obstacles other than the depth of the river and the height of the mountain, which was steep there, we crossed close to the enemy' (Ressinger 2005, 228-9).

It was this flanking movement, and the success of Schomberg's diversionary tactics on the western flank which caused the Jacobites to pull back from Oldbridge to Donore Church, where after a rather confused but bloody clash, the Jacobites retreated towards Duleek, leaving the field to William.

The lands at Oldbridge, including the Proposed Development site, were held by the Moore family (later Earls and Marquesses of Drogheda) in the 17th Century. The Coddington family were established in North County Dublin since the 17th Century. In 1729, John Coddington purchased the Oldbridge Estate from the 5th Earl of Drogheda and the family made their home there until a series of raids on the house in the 1970's forced them to leave.

The area of the Proposed Development site was part of the Coddington estate, which was recorded as still being in the ownership of Henry B. Coddington, in the Griffith Valuations of the mid 1850's. The Proposed Development site while in the ownership of Henry Coddington, was being rented by a Thomas Hammond who had a house, offices and land and also a Bridget Mathews, who rented a house. It is likely that these buildings are those which still partially survive on the eastern edge of the development lands, and it is probable that the surviving older elements within this complex are those of a 'small farm' as defined by Stout (Stout, 2002; p152).

There is one known site of architectural interest in the vicinity of the Proposed Development site. Drybridge House (National Inventory of Architectural Heritage (NIAH) Ref 13902409; Protected Structure Ref: LHS024-008) is located on the north bank of the river, some 750 m to the northwest. It is a detached five-bay two-storey house, built c. 1820. In its appraisal of the building and its associated out-building the NIAH notes that this attractive complex of structures makes a positive contribution to the architecture of County Louth. Though modest in their design, the proportion and scale are enlivened by the retention of original and early features. The farm complex is a good example of this type of architecture and the whole

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group of structures makes a positive addition to the built heritage of the area. This is a fine example of a local ‘Strong farmer’s house’ as defined by Stout (ibid; p. 151). It will not be physically impacted upon by the development.

Boyne Navigation: The Boyne, one of the earliest navigation schemes in Ireland, was canalised between 1748 and 1790 in order to encourage trade with the Dublin market and to transport commercial goods to the port at Drogheda from inland markets (ibid. 141). The Lower Boyne Navigation was heavily subsidised because of the benefit it would bring to the Slane mills. In 1756 the Inland Navigation Corporation set up a body of local noblemen and gentry to oversee the ongoing work of making the Boyne navigable. Eight locks were built between Drogheda and Slane to be made of the largest 'rude stones' available and the 'walls of lime and stone [made] in the best manner'. However due to fluctuations in water levels, the canal was only usable for eight months of the year and below the sea lock at Oldbridge, the nearest Boyne Navigation element to the proposal, the navigation is subject to tidal rise and fall as well as river flow, which would have imposed a time window on traffic to and from Drogheda. These factors would have reduced the commercial viability of the system, with the navigation eventually succumbing to competition from roads and railways. In 1902, James McCann of Ardsallagh, Navan, took over the canal from the Boyne Navigation Company on a lease of seven years, with a pleasure cruiser, the 'Ros na Ree', operating a passenger service in the summer months between Oldbridge and Navan during the years 1905-1914. The canal still did not pay so the Boyne Navigation Company went into liquidation in 1913, and was bought by John Spicer, son-in-law of James McCann. The canal continued in operation until 1923 when it was abandoned. An Taisce bought the canal from John Spicer for £1 in 1969.

‘The Emergency’ 1939-1945: There were two perceived threats in the run up to the outbreak of WWII, that from the Germans and that from the British. The Boyne played a pivotal role in the defence strategy to counteract the latter threat. The Boyne / Blackwater was considered a ‘good line’ because they acted as a ‘tank obstacle’. All crossings were to be covered by ‘blockhouses’ and ‘machine gun pits’. The blockhouses are more usually referred to as pillboxes and there are fourteen recorded between Rathmullan in the east and Rossnaree in the west. They are concrete built low squat structures, generally square or trapezoidal in plan, with sides of roughly 4 m in length. The two nearest sites are at Rathmullan, some 300 m to the northeast and the second is located in Oldbridge some 500 mm to the northwest.

### 12.3.3 Cartographic Record

The Larkin map of 1812, the Ordnance Survey (OS) map of 1837 and the OS map of 1912 were consulted. The Larkin map displayed in Figure 12-7 shows the Proposed Development site as open ground, with a cluster of buildings recorded along the eastern side.

The 1837 OS map displayed in Figure 12-8 shows the proposed site as farmland. The cluster of farm buildings on the east side of the Proposed Development site is recorded, consisting of group of five separate buildings. The main one appears to be aligned east west along the south side of the group, with another main building, aligned north south to the northeast of the first. Three smaller buildings are recording dotted around the two main structures.

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*Figure 12-7 Location of the Proposed Development Site on a Detail of William Larkin's 1812 Map of County Meath*

The 1912 OS map displayed in Figure 12-9 shows evidence for land improvements, with the smaller fields in the area being amalgamated into larger fields. The cluster of farm buildings to the east has also been modified, with the main east-west aligned building extended to an L shape, with the addition of an extension on its west end, the north south aligned building remais unaltered, however the group of three smaller buildings have been removed.




*Figure 12-8 Proposed Development Site on OS Map of 1837*

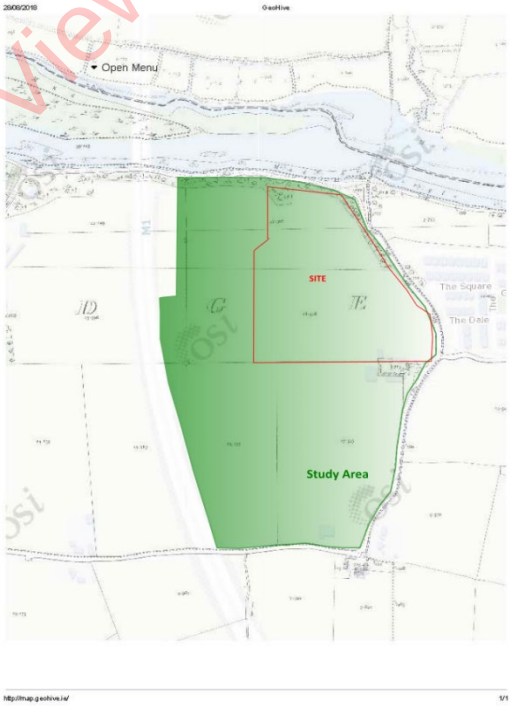



*Figure 12-9 Proposed Development Site on OS Map of 1912*

The layout of roads, north and south of the River Boyne and around the Proposed Development site, is depicted on the 1837 edition map much as it exists today with the obvious exception of the recently constructed M1 motorway.

### 12.3.4 Aerial Photographic Record

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The aerial photographs (APs) of the Rathmullan and Oldbridge areas were examined using those held in the Geological Survey of Ireland (GSI), as well as those on the Historic Environment viewer and those available on the web, including a Lidar image of the site.

The relevant photograph from the GSI covers the area west of Drogheda and shows both sides of the River Boyne. It was taken in April 1973 (ref: 036). The area of the Proposed Development site is substantially as it is today with the exception that the middle field is divided into two smaller fields, with the western of the two apparently either under grassland or winter wheat at the time of the aerial photograph. The circular feature noted in the site visit in this field is clearly visible on this photograph, and is undoubtedly the same feature recorded on LiDAR, shown below in Figure 12-10and noted in the SMR as ME020-072----.

APs available for review on the web date from 2005, 2007, 2009 (B&W) and 2017 (Figure 12-11). These show that the field boundary which once divided the middle field in two was removed after 2009. The circular feature, probably ME020-072----, is visible on the 2005, 2007 and 2017 APs, with evidence for the archaeological test trenching visible on the 2009 photograph. Away from the Proposed Development site, evidence for the route of the North-South gas pipeline is clearly visible running to the west of the M1 motorway on the 2007 AP.

Nothing new of Cultural Heritage significance was noted in the examination of the APs.

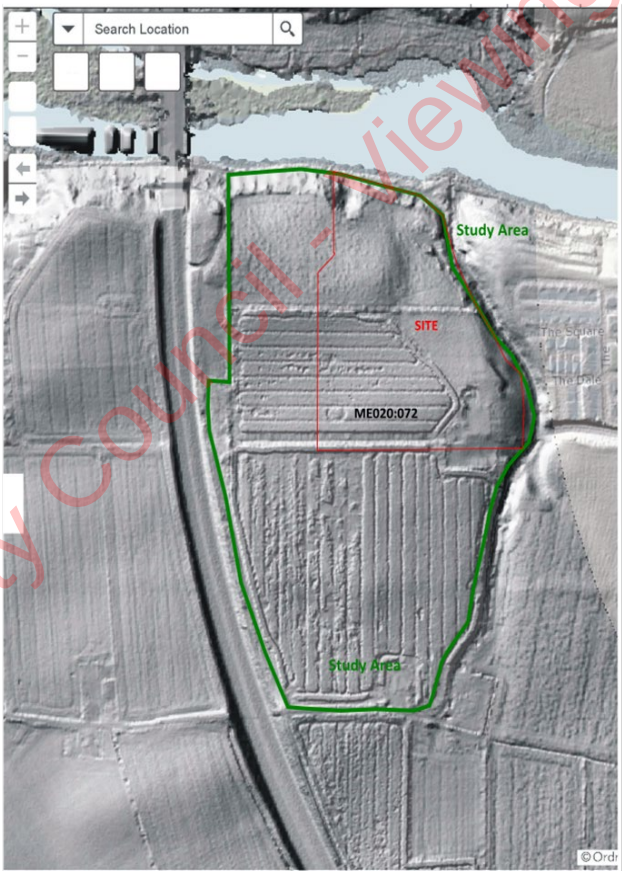



*Figure 12-10 LiDAR Survey of the Proposed Development Site, with Location of ME020:072 Indicated*

### 12.3.5 Topographic Files, National Museum of Ireland

The following townlands were searched for reference to the discovery of any artefacts or finds: Oldbridge, Rathmullan, and Sheephouse. A number of stray finds have been recorded

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from the vicinity; however, it should be noted that generally these records do not include finds from the recent spate of archaeological excavations associated with the construction of the M1 motorway.

Oldbridge
Monument: Double cist.
Find: Two food vessels, jet necklace, human skull, five boxes of teeth.
Found: Mound in the grounds of Old Bridge House
Refs: Coffey, G, PRIA III (1893-6), 747-52. Haddon, A, PRIA IV (1896-98), 570-585.

Sheephouse
Monument: Double cist, in a mound in the grounds of Old Bridge House
Find: Bronze processional cross, pricket candlestick, and bronze bell.
Description: Old bridge is only a short distance from Mellifont, and these artefacts may have formerly belonged to the monastery and were perhaps removed during the dissolution of the monasteries.
Found: In a quarry, a few feet below the surface.
Refs: Royal Society of Antiquaries of Ireland, Part I, Vol. XCV, Series VI (Vol. V.).

No stray finds are noted from the Proposed Development site.

### 12.3.6 Recent Archaeological Work in the Vicinity of the Proposed Development Site

Until 2009, reports of excavation were recorded annually in the Excavation Bulletin published by Wordwell and edited by Isabel Bennett. These volumes contained short summaries of all excavations carried out in Ireland. Since 2009, these have been published to the web on www.excavatione.ie. A full list of the summary details of excavations carried out in the vicinity of the Proposed Development site is listed in Volume 3- Appendix 12.4, with a note, where applicable of the associated SMR reference number (Figure 12-4).

The only excavation which has a direct bearing on the Proposed Development site was that which took place in 2008, and involved the testing of the Proposed Development site, consisting of 99 machine dug test trenches spread across the footprint of a much larger development area, but including the Proposed Development site. A summary is presented below.

Oldbridge, Co Meath (Figure 12-12), SMR No: ME020- 088----,
Excavation.ie ref: 2008:0997, License No: 08E0506
The study area was located immediately east of the M1 motorway and south of the River Boyne. It comprised four fields, covering an area of c.64 acres, under grassland and tillage. The works under this licence included the excavation of 99 test-trenches and the metal detecting of all resultant spoil. This work was preceded by a desk-based assessment and a geophysical survey (07R190). It is notable that the site lies within the wider Battle of the Boyne landscape, some 350m east of the core area (ME020-025----), and may be where King William crossed the river. The density of known prehistoric remains within the locality, particularly of Bronze Age date, found during the pre-construction stages of the adjacent M1 motorway, is reflected in the findings from these investigations where a large Middle Bronze Age enclosure was discovered in the northern field (Field 3). A ring-ditch and two cremations, also of likely Bronze Age date, were discovered in the southernmost (Field 1).

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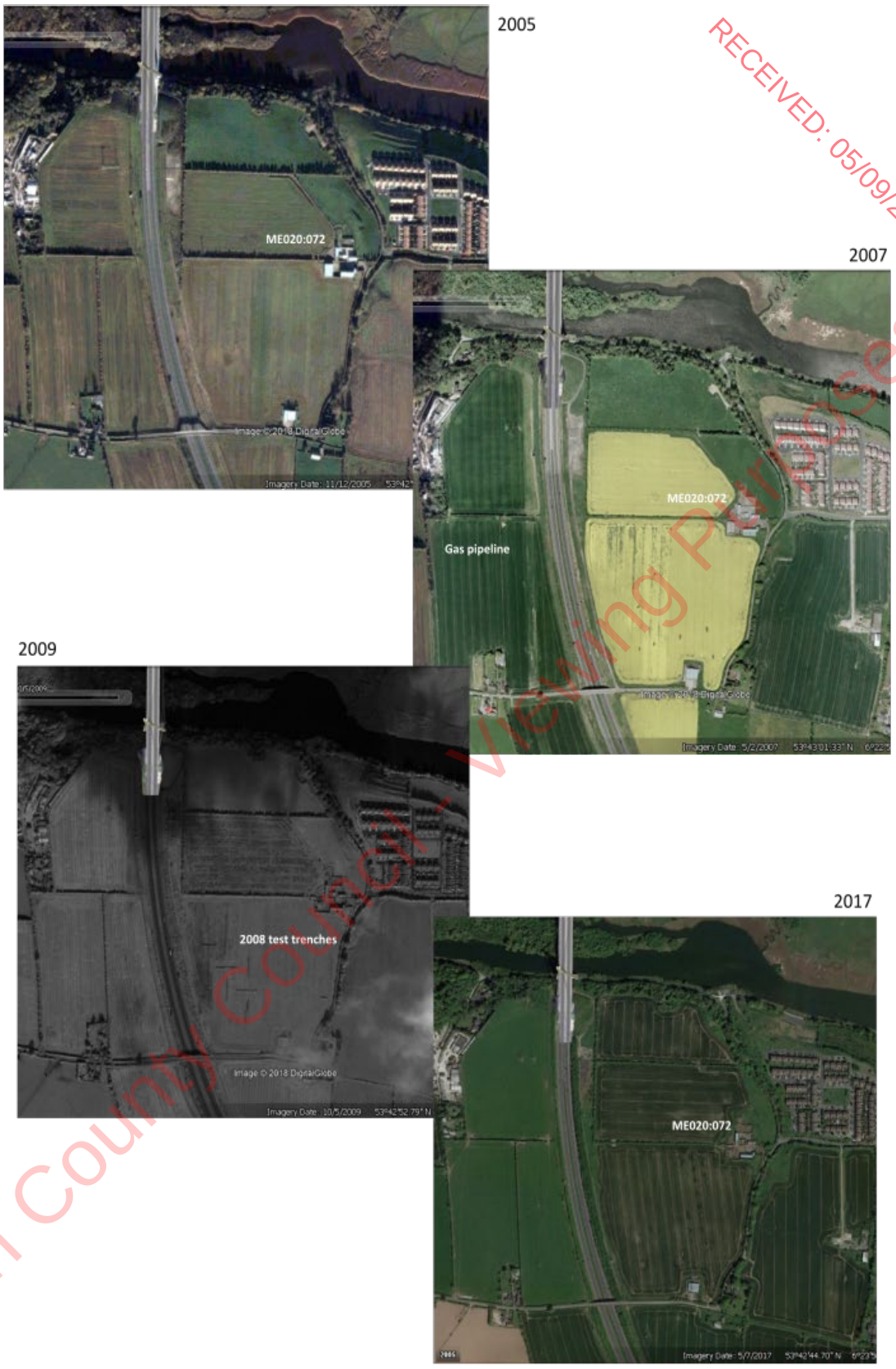
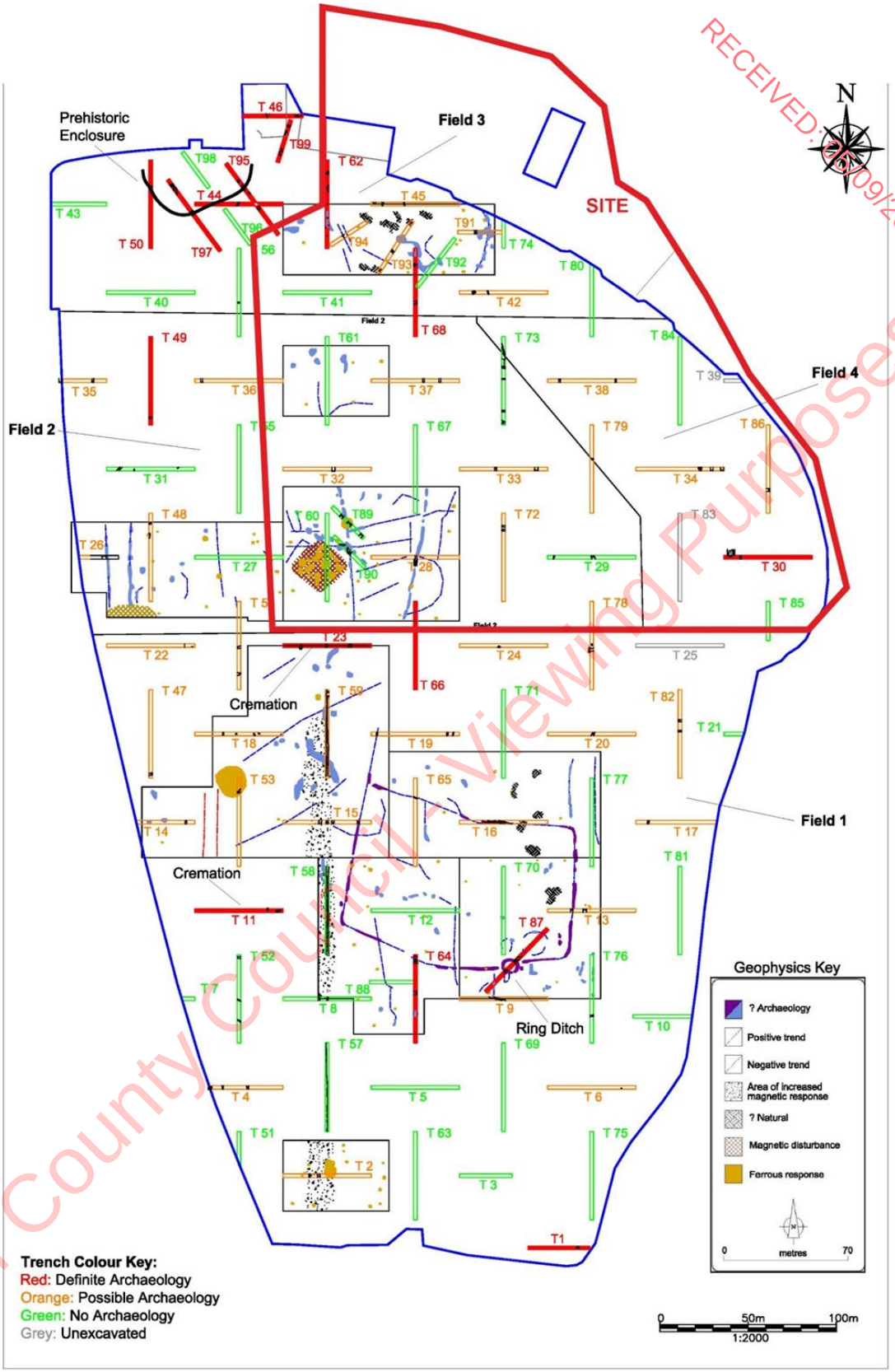



*Figure 12-11Aerial Photographs of the Study Area*

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*Figure 12-12 Extent of Archaeology Uncovered across the Study Area, including Results of Geophysical Survey and Archaeological Test Trenching under Licence No: 08E0506. Extent of Site Developments also Indicated*

Field 1 (outside the present development area) contained 48 of the trenches. Six contained definite archaeology, 22 contained remains of potential archaeological interest and 20 contained no remains of archaeological interest. The definite remains comprised two cremations, a ring-ditch, a pit containing prehistoric pottery, a pit containing a cache of prehistoric, worked flint and a pit with in situ burning. The potential remains comprised ditches and pits of unknown antiquity, many of which may be of post-medieval or modern date. It is notable that a number of those undated ditches in the north-east of the field did appear to be sealed beneath the non-natural subsoil, suggesting some antiquity. Along with the ring-ditch and a number of other smaller anomalies, the geophysical survey revealed a rectangular relic field system in the centre of the field. It was encountered seven times and excavated in six cases but did not reveal any dating evidence. An additional trench was stripped along a length of this feature and a further 3m section was excavated by hand, specifically to attempt retrieval of dating evidence, but none was discovered. It was found to cut the ring-ditch and consequently post-date it. It probably originates from the medieval to post-medieval period and remains of uncertain archaeological significance.

Field 2, the eastern half of which forms part of the Proposed Development Area, contained 20.5 trenches. Only one of those contained definite archaeological remains, 9.5 contained potential remains and 11 contained no remains of archaeological interest. The definite archaeological feature comprised a ditch terminus or elongated pit containing a fragment of burnt bone. A number of geophysical anomalies were noted in the field, but, where dating evidence was retrieved, all were proven to be post-medieval.

Field 3 was the northernmost field and was located just south of the River Boyne. It contained 22 trenches, eight with definite archaeological remains, five with potential archaeological remains and nine with no remains of archaeological interest. A prehistoric enclosure, of probable Middle Bronze Age date (c. 1500 BC) and c. 70m in diameter, was discovered in Field 3. An impressive array of Middle Bronze Age pottery was retrieved from a single slot excavated to its base. A relatively dense cluster of archaeological remains was also encountered, mostly to the exterior of the enclosure. The potential archaeological remains comprise undated ditches and pits. The geophysical report proved of limited value in Field 3 with most anomalies proving of relatively recent or non-archaeological origin.

Field 4 was located to the north-east corner of the Proposed Development Area and contained 6.5 trenches. It contained one trench with definite archaeological remains, 3.5 with potential archaeological remains and two with no archaeological remains. The remains labelled definitely archaeological in Field 4 comprised a metalled surface and adjacent post-hole. Its date remains unknown, but the only artefact retrieved from its surface was a pottery crumb of potentially prehistoric date. The potential archaeological remains once again comprised undated ditches which do not match any previous maps but are of probable post-medieval date.

## 12.4 Characteristics of the Proposed Development

A comprehensive description of the Proposed Development is outlined in Chapter 2 of this EIAR.

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## 12.5 Potential Effect of the Proposed Development

### 12.5.1 Construction Phase

At the outset it should be noted that even within a development site where public open space is to be maintained within the overall development, it is generally impractical to attempt to protect these areas as green spaces in the course of construction, particularly those within the main part of the development and therefore for the purposes of this chapter the entirety of the Proposed Development site is considered the development area. However, it should be noted that it is proposed to protect the zone of archaeological potential associated with the Bronze Age enclosure, ME020-088----, located outside the Proposed Development site, to the northwest.

The construction phase will involve the extensive disturbance of the existing ground within the Proposed Development site. This will include extensive topsoil stripping and landscaping, including the extensive green space at the northern end of the site, the excavation of foundations for buildings and roads, with extensive trenching for all associated services, including attenuation tanks and pumping stations. Consequently, any sites or features of Cultural Heritage interest will be negatively affected.

#### 12.5.1.1 Archaeology

There is one known site of archaeological interest from within the Proposed Development site, recorded as ME020-072---- on the SMR. It was noted on a recent Lidar survey of the area and was also noted from various APs of the site and was visible in the course of the 2019 field inspection. In addition, it was further recorded in the geophysical survey of the Proposed Development site which was undertaken in 2008. Here it was described as an unusual ferrous response which appeared to be composed of multiple ferrous anomalies forming a rectilinear area of magnetic disturbance approximately 23 m by 23 m. The surveyor noted that the shape of the disturbance was curious, adding that although the ferrous nature of the response was 'typical of modern disturbance' a definitive interpretation was not possible.

The feature was further examined in the course of the phase of archaeological test trenching which also took place across the Proposed Development site in 2008 (08E0506). Trench 60 was opened across the anomaly which revealed the feature to be a dump of modern construction material and that no remains of an archaeological nature were revealed. As a consequence of the geophysical survey and the follow-up archaeological test trenching, the feature ME020-072---- can be discounted from further analysis of effects.

There is a second SMR site, located within the close environs, but outside the boundaries of the Proposed Development site, ME020-088----. This refers to an enclosure uncovered in the north eastern corner of Field 1, which the excavator described as a prehistoric enclosure, approximately 70 m in diameter, of probable Middle Bronze Age date (c 1500BC) In addition a relatively dense cluster of archaeological remains, consisting of undated ditches and pits, was also encountered, mostly to the exterior of the enclosure. It is proposed to protect the Bronze Age enclosure, in the course of the construction phase, to avoid any accidental incursion into this archaeologically sensitive area.

Apart from the Bronze Age enclosure, the archaeological works undertaken in 2008 revealed extensive previously unrecorded archaeological features and deposits across the Proposed

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Development site and surrounding fields (Figure 12-12). At the southern end of Field 4 to the south of the Proposed Development site, the archaeology uncovered in the test trenching consisted of the remains of two cremations, a ring ditch, a pit containing prehistoric pottery, a pit containing a cache of prehistoric worked flint and a pit containing in situ burning. In addition, some further potentially important archaeological remains were uncovered, comprising of ditches and pits of unknown antiquity many of which may be of post-medieval or modern date. It was noted that a number of the undated ditches appeared to have been sealed beneath the non-natural subsoil, suggesting some antiquity. Along with the ring ditch and a number of other smaller anomalies, the geophysical survey revealed a rectangular relic, but undated, field system. However, the field system was noted to cut the ring ditch and consequently postdates it. The excavator noted that it was likely that the system dated from the Medieval to post-Medieval period but remained of unsure of its archaeological significance.

At the north end of Field 4 and extending into the area of the Proposed Development site, further archaeological deposits were encountered, consisting of a ditch terminus or elongated pit that contained a fragment of burnt bone and was sealed beneath a layer of non-natural subsoil, a metalled surface and adjacent undated posthole, however a small sherd of pottery was retrieved from the surface which was of potentially prehistoric date. In addition, a series of undated ditches were uncovered, which were not noted to match any previous maps but were considered by the excavator of probable post-Medieval date.

As the construction phase will involve the extensive disturbance of the existing ground within the Proposed Development site, which will include extensive topsoil stripping, excavation of foundations for buildings and roads, with extensive trenching for all associated services and groundworks associated with landscaping, all of the surviving sub-soil archaeological features will be severely adversely effected by the construction phase of the proposed developments on the Proposed Development site.

In the area to the northwest of the Proposed Development site, the area of the Bronze Age enclosure ME020-088---- and a 10 m wide buffer zone, will be physically protected in the course of construction works, with the erection of a temporary fence, harras fencing or similar, which will be erected in advance of all groundworks and will be only removed when constructions works are completed.

In regard to archaeological sites outside the Proposed Developments site, particularly the UNESCO World Heritage Site and its associated buffer zone. It is considered that the construction phase of the Proposed Development will cause very minor changes to the historic landscape of the buffer zone, with virtually unchanged visual effects but with very slight changes in noise levels, together resulting in a very small change to historic landscape character. As such there will be negligible effects to the buffer zone associated with the World Heritage site. In addition, as there will be no change to elements, parcels or components of the historic landscape, with no visual or audible changes and no changes in amenity or community factors to the core area of the World heritage site, there will be No Change in terms of effects from the construction phase on the Core Area of the World heritage Site (ICOMOS 2011 and Volume 3-Appendix 12.5).

There will be no effects in the construction phase of any other sites of archaeological interest.

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The significance of effects on the site ME020-072--- is considered to be neutral, as previous archaeological investigations proved it to be modern in date and non-archaeological in form. The significance on the Bronze Age enclosure site ME020-088---- is also considered neutral as the site is located outside the red line boundary of the Proposed Development site. The significance on the buried archaeological deposits from within the site is considered major, as the construction phase will involve the extensive ground disturbance across the Proposed Development site which will significantly affect any buried archaeological deposits. Finally, the significance of effects on the adjacent buffer zone of the World Heritage Site is considered minor, limited to some temporary changes in noise levels.

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#### 12.5.1.2 Architecture

In addition to the known archaeological component to the Proposed Development site, there is also an architectural aspect, in the form of the cluster of farm buildings located on the eastern side of the site. The original buildings appeared on the Larkin map of 1812, (Figure 12-7) OS map of 1837 (Figure 12-8) and are also referred to in the Griffith Valuations of c. 1850, it is likely therefore that they date to at least the early part of the 19th century. While it is true that they have been much modified and disturbed by later agricultural developments, particularly in the 20th century, there is still some original 19th century fabric surviving within the cluster (Volume 3- Appendix 12.2, Plates12.7 and 12.8) and it is possible that the cluster extends beyond the buildings presently visible.

As the construction phase involves the proposed levelling and removal of this cluster of buildings as preparatory ground works for the development of a new site entrance, the surviving architectural features will be severely adversely effected.

In regard to architectural sites outside the Proposed Development site, there will be negligible effects on these sites from the construction phase.

The significance of effects on the cluster of buildings from within the Proposed Development site is considered moderate / minor, due to the fact that although the buildings are 19th century or earlier in date and will be demolished in the course of the development, they are greatly modified, with the historic remains in a poor state of preservation. The significance on the architectural resource outside the Proposed Development site is deemed neutral.

#### 12.5.1.3 Cultural Heritage

Finally, there is a broader Cultural Heritage component to the proposal, which in the case of the Proposed Development site, consists of the Battle of the Boyne. It is known that James posted mounted piquets in the ground to the north of the Proposed Development site to monitor the potential use of the nearby Mill Ford across the Boyne by the Williamite forces. The piquets on seeing forces advancing, offered some considerable resistance, while the alarm was being raised. However, before the Jacobites could mobilise properly, William and his accompanying forces were across the river. It is highly improbable that the Williamites scaled the steep southern river bank, rather they certainly used the more easily accessible ravine known as Pass-if–you-can, which runs along the eastern boundary of the Proposed Development site.

In addition, despite targeted research within the Proposed Development site and surrounding areas, in terms of metal detector and geophysical survey backed by an extensive programme of archaeological testing, no certain physical evidence of features or

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artifacts were recovered which could be assigned to the battle. It must therefore be presumed that while the Proposed Development site was part of the wider Battle of the Boyne landscape, no significant engagements took place here, or at least no activity which left its mark in the physical archaeological record.

As the construction phase will involve the extensive disturbance of the existing ground within the Proposed Development site, which will include extensive topsoil stripping, excavation of foundations for buildings and roads, with extensive trenching for all associated services, the elements of the Cultural Heritage associated with the Battle of the Boyne will be slightly adversely effected by the construction phase of the Proposed Development on the Proposed Development site.

In regard to Cultural Heritage sites outside the Proposed Development site, there will be negligible effects on these sites from the construction phase.

The significance of effects on potential buried archaeological deposits associated with the Battle of the Boyne are considered major, as the construction phase will involve the extensive ground disturbance across the Proposed Development site which will significantly affect any buried archaeological deposits associated with the battle. Finally, the significance of effects on the Cultural Heritage sites outside the Proposed Development site, is considered minor.

### 12.5.2 Operational Phase

There will be no additional effects from the operational phase on sites of an archaeological or architectural nature within the Proposed Development site.

#### 12.5.2.1 Archaeology

There will be some effects on the setting of the Bronze Age enclosure MH020-080----. Although there are no upstanding remains of this site, archaeological investigations suggest that it consists of a roughly circular enclosure some 70 m in diameter, defined by a subsoil cut ditch. The construction of a housing development close by to the east, will alter its current largely rural agricultural setting to one of semi- residential and will have a slight adverse effect on the setting of this site.

The main site of Cultural Heritage interest outside the boundaries of the Proposed Development Site is the World Heritage Site of Brú naBóinne - Archaeological Ensemble of the Bend of the Boyne (UNESCO Ref No 659), the buffer zone boundary of which runs parallel to the western edge of the M1 motorway, some 250 m from the western edge of the Proposed Development site. The buffer zone which extends to some 2,500 hectares surrounds the core area and extends to the Mattock and Delvin Rivers in the north and as far as Platin and Red Mountain to the south. The boundaries of the buffer zone were set having taken into account views into and out of the core area, and there will be no effects on the core area from this development.

There will however be limited views from the buffer zone into the Proposed Development site and out of the Proposed Development site into the buffer zone, in the operation phase. Any adverse effects to the west will be reduced to a negligible level by the presence of existing and proposed landscape planting along this boundary. The Proposed Development site will however be overlooked from the south by the hill at Donore which is within the buffer zone and has located on its summit the SMR site ME020:011----, the Medieval Church and

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Graveyard of Donore and which was also the site of the Jacobite camp at the Battle of the Boyne (Volume 3- Appendix 12.2, Plate 12.9). At over 1.3 km distant, it is considered the proposal extends existing developed areas rather than effects a fundamental change and as such any adverse effects on the World Heritage Site buffer zone and the archaeology associated with the hill at Donore are slight.

The buffer zone is not significantly visible from the site elsewhere.

Of the other archaeological sites outside the Proposed Development site's boundary, six, ME020-035----, 036----, 040----, 049----, 054---- and 063----, were uncovered in the course of the construction of the M1 Drogheda by-pass and therefore no longer exist, having been archaeologically excavated and preserved by record. There will therefore be no effects on these sites from the operational phase.

Of the remainder, ME020-:008---- is an enclosure which was discovered in the course of a geophysical survey undertaken in advance of the construction of the North-South Gas Pipeline, and as such has no surface expression. However, the operation of a housing estate, with associated infrastructure some 600 m to the north west in what were once green fields, will have a negligible to slight adverse effect on the setting of this site.

The other sites, the standing stones (ME020-030---- and 041----), the souterrain (ME020-004----) and the ring ditch (ME020-025003) are all located on west facing ground some 1 km to the west and will not be effected by the operation phase of the development.

The significance of effects on the setting of the Bronze Age, MH020-088----, enclosure is considered moderate / minor and also moderate / minor significance on the buffer zone associated with the World Heritage site. The significance of effects on the setting of Donore Hill is also considered moderate / minor, while the significance of the effect on the setting of the enclosure ME020-:008---- is deemed to be minor.

#### 12.5.2.2 Architecture

There is only one recorded site of architectural interest in the vicinity, that of Drybridge House, located on the north side of the river some 750 m to the northwest of the Proposed Development site. The house now has the north-south line of the M1 motorway and the substantial structure of the Mary MacAleese Bridge, between it and the Proposed Development site (Volume 3- Appendix 12.2, Plate 12.10). The effects of the operational phase of the development on the house will therefore be negligible to slightly adverse.

The nearest site associated with the Boyne Navigation proper is Oldbridge lock 750 m to the north west, as a consequence there will be no effects on the Boyne Navigation from the development proposal.

Similarly, the nearest sites associated with 'The Emergency' are two pillboxes, the first located along the Rathmullan ramparts, is located some 300 m to the northeast, while the other pillbox, located at Oldbridge is some 500 m to the north west. There will be no effects from the proposal on these sites.

The significance of effects on Drybridge House, the Boyne Navigation and pillboxes is considered neutral.

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#### 12.5.2.3 Cultural Heritage

The Battle of the Boyne site (ME020-025----) runs to over 2,500 ha in extent, from the Williamite camp near Tullyallen in the north, to the Jacobite camp at Donore to the south, and from the crossing of the Boyne by Schomberg at Rosnaree to the west, to William's Rivercrossing at Mill Ford to the east. The Proposed Development site is located on the extreme eastern edge of the wider battlefield landscape, with the presence of a group of mounted piquets recorded as having been stationed in ground to the north of the Proposed Development site.

Story's map of 1693 (Figure 12-13) is interesting in regard to the layout of the battle. There are three main aspects which are notable from the Story map; the first is his indication that William took up a position on high ground to the northeast of his main camp from where Story records 'A hill from whence his Majesty first saw the Irish camp'. Comparing Story's map to the modern OS, it is apparent that William took up a position on Red Mountain some 2 km to the northeast of Tullyallen, and from where today there are commanding views across the Boyne valley to the site of the Jacobite camp at Donore (Volume3- Appendix 12.2, Plate 12.11). The Proposed Development site is also visible from this commanding location, and the operation phase will have negligible to slight adverse visual impact on the general setting of the Battle of the Boyne site from this location.

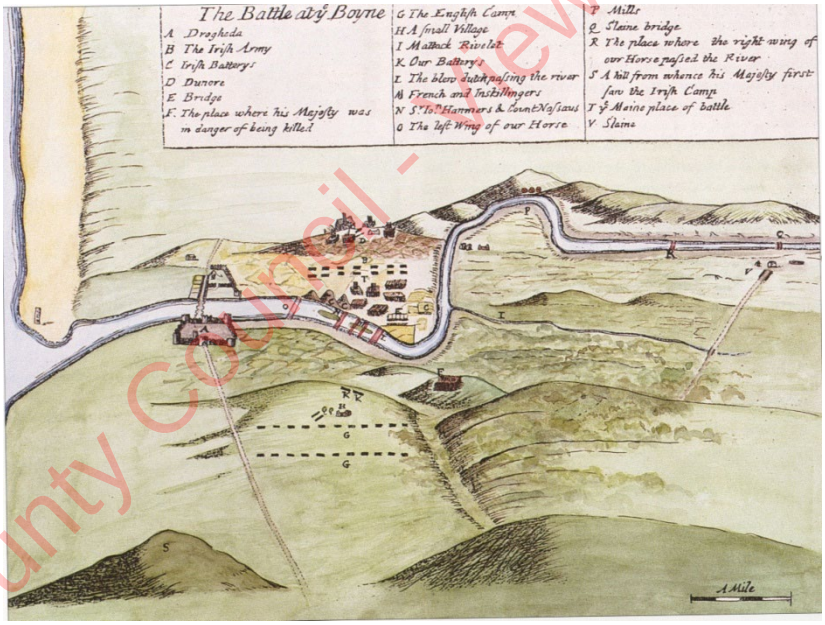



*Figure 12-13 Story's 1693 Map of the Battle of the Boyne Site*

The second aspect of Story's map is the depiction of the Jacobite camp at Donore, the effects from this site have been dealt with above.

The final noteworthy detail recorded by Story is the location of the crossing point of 'The left wing of our horse'. It was at the point immediately below the Proposed Development site, at Mill Ford, (Volume3 -Appendix 12.2, Plates 12.12 and 12.13) that the left wing of the Williamite forces, under the command of William himself crossed the river, and approached

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the Jacobite camp at Donore via the deep and wooded ravine of Pass-if-you-can (Volume 3-Appendix 12.2, Plate 12.14). Due to the local terrain, with the Proposed Development site positioned on high ground above the crossing point with the ground between which will remain densely wooded, there will be no adverse effects from the operational phase of the development on this area of the battlefield, with the significance of effects deemed to be minor.

### 12.5.3 "Do Nothing" Effect

The do-nothing scenario would not result in any significant changes to the baseline cultural heritage resource. The magnitude of effect would be no change leading to a significance of effect of neutral

## 12.6 Avoidance, Remedial and Mitigation Measures

### 12.6.1 Construction Phase

The Proposed Developments will negatively affect the various archaeological features and deposits uncovered within the area of the Proposed Development site, in the course of the testing phase and any other as yet unknown surviving archaeological remains. However, the assessment revealed that these surviving archaeological remains have suffered from significant plough truncation and by and large survive as sub soil cut features.

It is therefore recommended that pre-development mitigation takes place in the form of pre-development archaeological investigations and preservation by record apart from the BA enclosure to the northwest of the Proposed Development site, which will be the subject of a specific targeted mitigation strategy (see 12.6.1.10 below).

In order to address the specific question of potential survival of battlefield archaeology associated with the Battle of the Boyne, it is proposed to undertake a phase of pre-topsoil stripping investigations. In consultation with the battlefield archaeology specialist, a number of sample areas will be selected, across the Proposed Development site, each measuring 40 m by 40 m. These will be located in areas where the specialist considers most likely to produce results, but will potentially be located along the ridge at the north end of the Proposed Development site, overlooking the Boyne and the northeast area of the site overlooking Pass-if-you-can. Both these areas are likely to have been the locations for the deployment of piquets by the Jacobite forces. Additional survey squares may be located elsewhere across the body of the Proposed Development site, particularly along the lines of old field boundaries which may have afforded protected positions in the course of the battle. All the selected areas will be subject to detailed licensed metal detector survey. The precise locations of all 'hits' will be surveyed and investigated, with all possible artefacts examined by the attending battlefield specialist. The results of these sample investigations will be discussed with the relevant heritage authorities and may lead to further work, specifically targeted at battlefield archaeology.

In addition, it is recommended that the site should be topsoil stripped under licensed archaeological supervision making sure to include any non-natural sub soil deposits. The monitored area should include appropriate areas of the green space at the northern end of the site as well as the intended path network within the green space. It should also include any works compound areas and topsoil storage areas..

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All topsoil should be further examined with the aid of a metal detector, under a separate metal detector licence.

An archaeologist with battlefield archaeology experience should be available for regular consultation to aid in the identification of all metal work recovered in this phase and all additional phases of archaeological works.

The topsoil stripping should be carried out in a pre-construction phase of works, to allow time to undertake any additional archaeological investigations which may be required.

All topsoil stripping archaeological works should be carried out by mechanical tracked backactor excavators fitted with toothless bucket under the constant supervision of a qualified licensed archaeologist. Despite the lack of certain artefactual evidence uncovered in the 2008 assessment works, it is recommended that, due to the location of the proposal within the wider landscape of the Battle of the Boyne, all topsoil stripping undertaken in association with any developments of the site be further surveyed by a licensed metal detector, assisted by an experienced battlefield archaeologist.

The substantially older architectural elements within the cluster of farm buildings along the eastern boundary of the Proposed Development site are undoubtedly the partial remains of the buildings recorded on Larkin and the first edition OS maps. This indicates that these remains date from at least the early 19th century. Such is the state of disrepair and later modifications of these farm buildings that it is not considered that preservation in situ is appropriate, however, it is recommended that an historic building survey (Level 2), is undertaken in advance of their demolition (Historic England 2006 p26). This should consist of both a written and photographic record, with detailed measured survey drawings where necessary.

In addition, the area around the cluster of buildings should be the subject of targeted pre-development test trenching, to examine the possibility that the cluster extends beyond the buildings currently upstanding and to record the full extent and layout of the buildings.

### 12.6.2 The Bronze Age Enclosure MH020-088----

The enclosure is located to the north-west of the Proposed Development site and was uncovered in four separate trenches in the course of the testing undertaken in 2008. It was defined by a 2m wide and an average 550mm deep U-shaped ditch which was filled with a series of deposits, the lowest of which produced a substantial quantity of sherds of pottery, the form and decoration on which suggests a middle Bronze Age date. Although only the southern half of the site was uncovered in the testing, the projected line would appear to describe a sub-circular enclosure some 70m in diameter. The soil profiles in each of the four test trenches where evidence for the enclosure was found revealed some 500mm of topsoil / ploughsoil over the enclosure. The surface of the ploughsoil varied in height from 23.1m OD at the west end of the enclosure to 21.6m OD on its eastern side.

Although the enclosure is outside the Proposed Development site, there is no physical boundary between it and the western limit of the Proposed Development. In order to avoid any possibility of accidental disturbance to this important archaeological site, it is proposed to protect it in the course of construction works by way of the protection measures set out in detail below.

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In the first instance and before any ground works take place on site, the line of the known feature, which was recorded in the course of the 2008 testing, will be established on the ground. Using this as the starting point a circular area some 70 m in diameter will be marked out, defining the projected full extent of the enclosure. Around this a 10 m wide buffer zone will be marked out and this will be the line used to erect the protective temporary harras-type fencing. There will be no ground disturbance associated with the erection or dismantling of the fencing.

The temporary fencing will be erected before any ground works commence and will only be taken down once all groundworks associated with site development are complete. The fenced-off area will be a strictly 'no-go' area and will not be used for any reason whatsoever in the course of the development works.

### 12.6.3 General Mitigation Recommendations

All archaeological ground works will be carried out using backactor tracked machines equipped with toothless buckets which are under the constant supervision of a suitably qualified and licensed archaeologist. The archaeologist will monitor the works until either the surface of glacial subsoil, formation level or the surface of archaeological remains is uncovered, whichever is encountered first. Care should be taken to ensure that the topsoil stripping includes 'non-natural' subsoil (possible hillwash) to ensure that any potential archaeological features are exposed in the works. Archaeological works should, if possible be phased in line with the overall phasing of the development programme and if possiblestay one phase, at least, ahead of the construction works, in order to avoid any potential conflicts between archaeology and construction.

It is recommended that all archaeological deposits uncovered during monitoring be recorded and investigated to best archaeological practice. They will in the first instant be cordoned off using high visibility tape and access to these areas by machinery and personnel denied until the deposits have been fully resolved.

The licensed archaeologist on site is responsible, on behalf of the developer, for the identification and appropriate treatment (e.g. excavation and recording) of all archaeological remains encountered. In order to fulfil the responsibilities of the developer therefore, the licensed archaeologist will have the authority to temporarily stop machining where potential archaeological material has been identified, in order to evaluate the character of said remains. It should be possible for work to continue (under archaeological supervision) in areas where no archaeological deposits have been encountered. Should archaeological remains be present, the licensed archaeologist will be responsible for communicating this to the client or appointed representative, as well as to the relevant Heritage Authorities.

In the event of the discovery of any archaeological remains during the monitoring, the deposits will be hand excavated to assess their nature date and extent and time will be allowed for the archaeologist to undertake the appropriate level of recording. The level of recording will depend on the complexity of the archaeological remains encountered and, in all cases, sufficient time will be allowed by the developer for this purpose.

If human remains, or any suspected grave cuts, are observed, machine excavation will cease, the statutory authorities and development sponsor will be informed immediately and a suitable methodology for dealing with the human remains or grave cuts will be agreed in writing with the heritage authorities. Work will not recommence in the area containing the

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human remains until such a methodology has been agreed, and all works subsequently undertaken in this area will be in accordance with this methodology.

During all archaeological works, recording will be by means of the standard methods employed during archaeological fieldwork. A day book will be maintained while all archaeological features will be recorded in writing utilising pro forma context sheets by means of scaled field illustrations and by appropriate photography.

It is recommended that the developer allow enough time in the development programme for any archaeological excavations. It should be noted that the results of all excavation including site evaluation and monitoring, must be compiled into a fully illustrated report.

In the course of the archaeological works all finds will be logged according to context, washed (if appropriate), bagged and catalogued prior to dispatching to the various specialists. A contract conservator will be on hand if necessary. All artefacts will be numbered and treated in accordance with National Museum guidelines and will be processed to a standard acceptable for deposition to the State's Cultural Resource Centre in Swords, Co. Dublin.

As with the finds, the site archive will also be processed to a standard acceptable for deposition to the State's Cultural Resource Centre in Swords, Co. Dublin.

A comprehensive final archaeological report will be compiled that will set out the results of the archaeological works in accordance with the terms of the National Monuments Acts and best professional practice. It will address the archaeological and historical background of the site. The location and levels (corrected to Ordnance Datum) of any archaeological deposits found will be clearly shown.

### 12.6.4 Operational Phase

The main concern within the operation phase is that of adverse visual impacts, from the various vantage points associated with the Battle of the Boyne and the views from the World Heritage Site at Brú na Bóinne. (See Chapter 11 Landscape and Visual Impact in this regard).

In order to minimise the visual effect on both of these (relatively distant) vantage points, it is recommended that the proposed planting design for the development should establish tree and shrub-lined boundaries to the north and south and add to the existing tree lined boundary to the west utilizing an appropriate variety of native species. (See the Landscape Strategy and Design chapter in this regard).

It is also recommended that trees and shrubs should form an important element within the boundaries of the Proposed Development site, to soften the hard lines which will result in the construction of the buildings and associated road network within the development (See Chapter 11Landscape and Visual Impact in this regard).

### 12.6.5 "Worst Case" Scenario

The worst-case scenario is considered to be the construction of the Proposed Development without the adoption and undertaking of the recommended programme of archaeological works, leading to the loss of real and potential elements of the local cultural heritage resource.

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## 12.7 Residual Effects

Following the competition of all mitigation measures, there are considered to be no residual effects associated with this development.

## 12.8 Monitoring

### 12.8.1 Construction Phase

The mitigation measures recommended above, including the monitoring of works by qualified archaeologists would support effective monitoring during construction to allow the further assessment of the scale of the predicted effects and the effectiveness of the recommended mitigation measures.

### 12.8.2 Operational Phase

No monitoring is required during the post-development phase of works

## 12.9 Interactions

There are no interactions to note for this chapter.

## 12.10 Difficulties Encountered When Compiling

No difficulties were encountered while undertaking this chapter.

## 12.11 Conclusion

A detailed archaeological desk-based assessment, geophysical survey and test trenching programme was carried out on some 26 ha. of green field lands in Rathmullan, Co. Meath. The Proposed Development site consists of some 9.2 ha. of open land used for agriculture, located at the northeastern end of these lands. The development consists of a Large-scale Residential Development (LRD).

Within the boundaries of the site is a recorded archaeological monument, ME020-072----, which previous investigations proved to be modern in date. A second monument, ME020-088----, a Bronze Age enclosure, located to the northwest, outside the boundaries of the Proposed Development site, will not be directly affected by any aspect of the present proposal. Steps however will be taken to prevent accidental damage to this site in the course of construction. Archaeological testing carried out in 2008 uncovered additional archaeological features scattered across the wider lands including cremation pits, ring ditches and other isolated pits and gullies.

To the west of the Proposed Development site lies the north-south running M1 motorway, immediately beyond which is the easternmost edge of the Buffer Zone associated with the *Brú na Bóinne* UNESCO World Heritage Site. The Core Area of the World Heritage Site, however, is located some 2.5km to the west.

The Proposed Development site is also within the wider landscape associated with the Battle of the Boyne (ME020-025----), and although the focal point of the battle site is considered to

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be located at Oldbridge some 1.5km to the west, important elements of the battle are known to have taken place both on and in the vicinity of the Proposed Development site.

The development will negatively effect any archaeological deposits surviving within the Proposed Development site. In order to mitigate these effects a programme of pre-construction archaeological investigation has been proposed in order to mitigate these effects.

Prior to topsoil stripping commencing and to address the potential survival of archaeology related to the Battle of the Boyne, sample areas across the Proposed Development site will be selected by a Battlefield archaeology specialist where a programme of detailed licenced metal detector survey and follow-up investigations, will be undertaken

It is also proposed that prior to demolition, the old farm complex of buildings on the east boundary of the site be subject to an historic building survey (Level 2).

In addition it proposed that a phase of the licensed archaeological monitoring of all topsoil stripping and, subject to agreement with the relevant heritage authorities, the preservation by record of all significant archaeological features and deposits uncovered. These works will include metal detection and the presence on site of a battlefield archaeologist to advise on any possible *Battle of the Boyne* related artefacts which may come to light.

Effects from the construction and operation phases of the development on the Core Area of the *Brú na Bóinne* World Heritage Site have been deemed to have a 'No Change' grading as per the ICOMOS *Guidance on Heritage Impact Assessments for Cultural World Heritage Properties*. While effects on the Buffer Zone are deemed to be 'Negligible' for the construction phase, due to the slight increase in noise and also 'Negligible' for the operation phase due to 'very minor changes to key historic landscape elements' and 'virtually unchanged visual effects'. These effects will be further reduced by the implementation of a landscape design which will increase the density of the existing hedge line on the western side of the subject site, between the subject site and the World Heritage Site buffer zone.

A comprehensive final archaeological report will be compiled that will set out the results of the archaeological works in accordance with the terms of the National Monuments Acts and best professional practice. In addition, all finds and site archive will be processed to a standard acceptable for deposition to the State's Cultural Resource Centre in Swords, Co. Dublin.

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## 12.12 References

Boulger, D. 1911 The Battle of the Boyne. London. M. Secker.

Brady, C., Byrnes, E., Cooney G., O'Sullivan, A. An archaeological study of the Boyne at Oldbridge, Co. Meath. Journal of Conflict Archaeology 3 (1), 53-77.

Childs, J. 2007 The Williamite wars in Ireland, 1688-1691. London. Continuum Books

CIFA 2014 Chartered Institute for Archaeology - Standard and guidance for archaeological field evaluation Published December 2014 (updated June 2020)

Cooney, G., Byrnes, E., Brady C. 2002 'The Archaeology of the Battle of the Boyne at Oldbridge, Co. Meath' Archaeology Ireland Vol. 16 No. 4 Winter 2002

EPA. (2022). Guidelines on Information to be Contained in Environmental Impact Assessment Reports, Environmental Protection Agency, Dublin.

Fitzgibbon, G. 2015 Kingdom Overthrown – Ireland and the Battle for Europe 1688-1691 New Island Dublin

Hays-Mcoy, G.A. 2009 Irish Battles - A military history of Ireland Appletree Press

Historic England 2006 Understanding Historic Buildings A Guide to Good Recording Practice

ICOMOS 2011 Guidance on Heritage Impact Assessments for Cultural World Heritage Properties. A publication of the International Council on Monuments and Sites 2011

Lenihan, P. 2005 1690 Battle of the Boyne Tempus Publishing

Macaulay T.B. 1979 The History of England. Penguin Classics

McNally, M 2005 Battle of the Boyne 1690 – The Irish campaign for the English crown. Osprey Publishing

Moraghan, M. 2007 Impact Assessment Report for a Proposed Housing Development Oldbridge/Rathmullan,Co. Meath (Unpublished Report, ADS Ltd)

Moraghan, M. 2008 Impact Assessment Report for a Proposed Housing Development Oldbridge/Rathmullan,Co. Meath(Unpublished Report, ADS Ltd)

Murtagh, H. 2006 The battle of the Boyne 1690: A guide to the battlefield. Drogheda. The Boyne Valley Honey Company

Ressinger, D.W., (ed.) 2005 Memoirs of Isaac Dumont de Bostaquet: A Gentleman of Normandy, London.

Sheane, M. 2006 King William's Victory – The Battle of the Boyne. Arthur H Stockwell Devon

Smyth, J. 2007 Brú naBóinne World Heritage Site. Archaeology Ireland 22 (2) 28-30.

Story, Revd G. 1693 A Continuation of the Impartial History of the Wars of Ireland, From the Time that the Duke Schonberg Landed with an Army in that Kingdom, to the 23rd of March 1691/2 when Their Majesties' Proclamation was published, declaring the War to be ended. London

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Stout, G. 1997 The Bend of the Boyne Co Meath in Aalen, F.H.A. et al Atlas of the Irish Rural Landscape Cork University Press

Stout, G. 2002 Newgrange and the Bend in the Boyne. Cork University Press

Whitaker, J. 2004 'Cultural and Heritage Assessment of a Proposed Residential Development Site at Rathmullan, Co. Meath' (Unpublished Report, ADS Ltd)

Wilde, W. 1949 The Boyne and the Blackwater. Dublin 3rd edition

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# 13 MATERIAL ASSETS: TRAFFIC AND TRANSPORT

## 13.1 Introduction

This section assesses the potential effects of the proposed residential development located in Rathmullan, Oldbridge, Drogheda, Co. Meath, on the surrounding area regarding vehicular, pedestrian and cycle access throughout the lifetime of the development. Furthermore, the potential impact of vehicular movement during the construction and operational phases of the Proposed Development is considered.

The site location and project description are detailed in Chapter 2 Description of Development of this EIAR.

The chapter outlines the methodology employed, the receiving environment at the application site and its surroundings, the characteristics of the proposal in terms of physical infrastructure, the potential effect that proposals of this kind would be likely to produce, the predicted likely impact of the proposal on the local road network, and the mitigation measures required to prevent, reduce or offset any significant adverse effects.

### 13.1.1 Quality Assurance and Competency of Experts

This chapter has been prepared by Waterman Moylan Consulting Engineers on behalf of Earlsfort Developments Drogheda Limited, written Fernando J. De Maio Traffic & Transportation Engineer at Waterman Moylan, with over 10 years' civil engineering experience, and reviewed by Joe Gibbons CEng MICE and Director of Waterman Moylan, with over 30 years' civil engineering experience in the industry.

A Traffic and Transport Assessment has been prepared in accordance with best practice and in accordance with the requirements of the *Traffic and Transport Assessment Guidelines* published by *Transport for Ireland (TII) / National Roads Authority (NRA)* in May 2014.

## 13.2 Study Methodology

The study area for the Traffic and Transport Assessment EIAR chapter is the transport network and junctions immediately surrounding the site which will be affected as part of the proposed development. The junctions chosen for assessment are outlined in Figure 13-5 below and were chosen based on professional judgement and observed vehicle behaviour within the local road network.

In line with best practice, the following methodology has been adopted for this assessment:

- A review of relevant available information was undertaken, as detailed in Section 13.11 below. This includes the Meath County Development Plan 2021–2027 and Louth Country Development Plan 2021-2027, existing traffic information, traffic and transport assessments submitted with planning applications for committed and potential future developments, as well as other pertinent studies.
- Site visit to gain an understanding of the site access and observe the existing traffic situation.

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- Consultations with Meath County Council through the pre-application meetings, to agree on the site access arrangements and to determine the scope of the traffic analysis required to accompany the planning application.
- The Traffic section of this "Traffic Transport Assessment" (TTA) is prepared with the following detail:
    - Obtain data on existing traffic flow conditions.
    - Determine trips to be generated by the Proposed Development and the committed and potential future developments in the surrounding area.
    - Determinate trip distribution for each development.
    - Assess the percentage impact of traffic generated by the site in relation to existing traffic flows at local junctions. Determine if this exceeds 5% at congested junctions or 10% at non-congested junctions.
    - Model the junctions with a high impact, based on the thresholds indicated above.
    - Identify, if necessary, mitigation measures.

## 13.3 The Existing and Receiving Environment (Baseline Situation)

### 13.3.1 Receiving Environment

**Land use**

The Land Use Zoning Objectives website indicates that the Proposed Development is located in two zones, designated as A2 - New Residential and F1 - Open Space. Section 14 – Land Use Zoning Objectives of the Consolidated Meath County Development Plan 2021-2027 (incl. Variations 1, 2 & 3) sets out the objectives for both zones:

- A2 zones. These zones are intended to provide for new residential communities with ancillary community facilities, neighbourhood facilities and employment uses as considered appropriate for the status of the centre in the Settlement Hierarchy. The permitted uses are: Residential / Sheltered Housing, B & B / Guest House, Bring Banks, Community Facility / Centre, Childcare Facility, Convenience Outlet, Children Play / Adventure Centre, Education (Primary or Second Level), Halting Site / Group Housing, Home Based Economic Activities, Leisure / Recreation / Sports Facilities, Retirement Home / Residential Institution / Retirement Village, Utilities.
- F1 Zones. These zones are intended to provide for and improve open spaces for active and passive recreational amenities. The permitted uses are: Car Park for Recreational Purposes, Craft Centre / Craft Shop, Community Facility / Centre, Cultural Facility, Cycleways / Greenways / Trail Development, Leisure / Recreation / Sports Facilities, Playing Pitches, Playgrounds, Utilities.

It is important to highlight that the lands to the East and South of the Subject Site are categorized as White Lands under the Consolidated Meath County Development Plan 2021-2027 (incl. Variations 1, 2 & 3). The objective of this designation is:

> *To protect strategic lands from inappropriate forms of development which would impede the orderly expansion of a strategic urban centre.*

In addition, the Development Plan further outlines:

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*White Lands are located in Navan, South Drogheda, East Meath, Kilmessan, Enfield and Ratoath. These are strategic lands, and their designation is to allow for a long term, integrated approach to be the taken to the expansion of an urban area. It is not generally envisaged that development proposals will be brought forward during the life of this Development Plan for such lands. No indication is therefore generally offered regarding the suitability or otherwise of individual uses on said lands within this Development Plan. Should the Planning Authority be satisfied that a project proposed for lands with a white land designation would assist with the implementation of the Economic Strategy and education provision, these lands can be released for employment creating development during the plan period in accordance with the Economic Strategy. White Lands should only be released where it would lead to significant employment creation, education provision or which cannot reasonably be accommodated on other employment zoned land.*

The Figure 13-1 below shows the land use indicated in the Land Use Zoning Objectives website and the location of the Proposed Development.

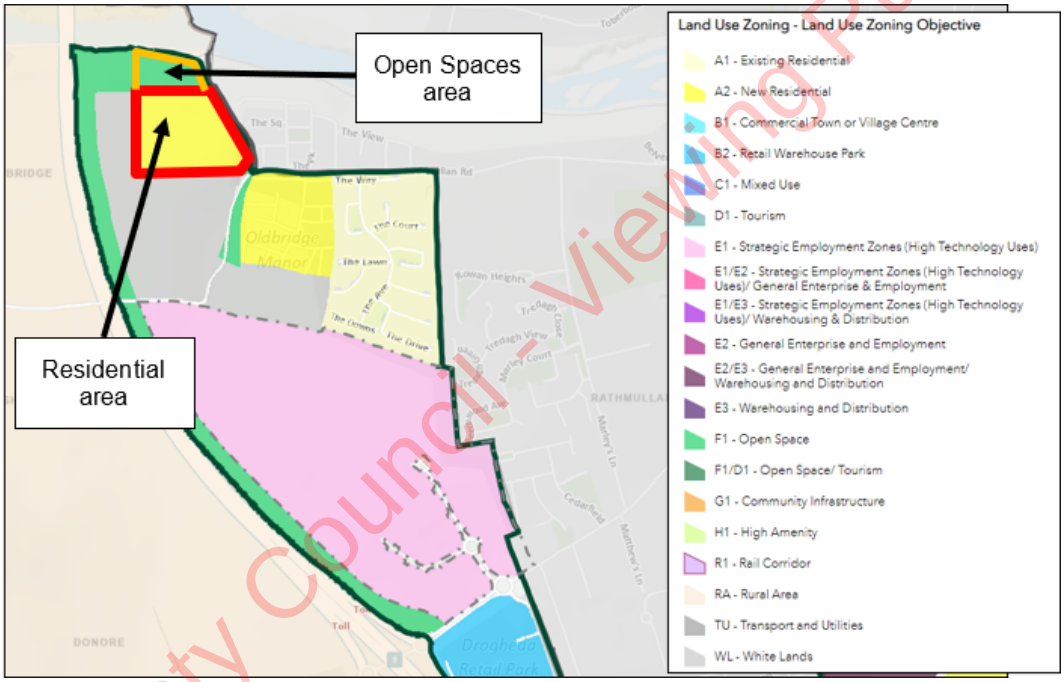


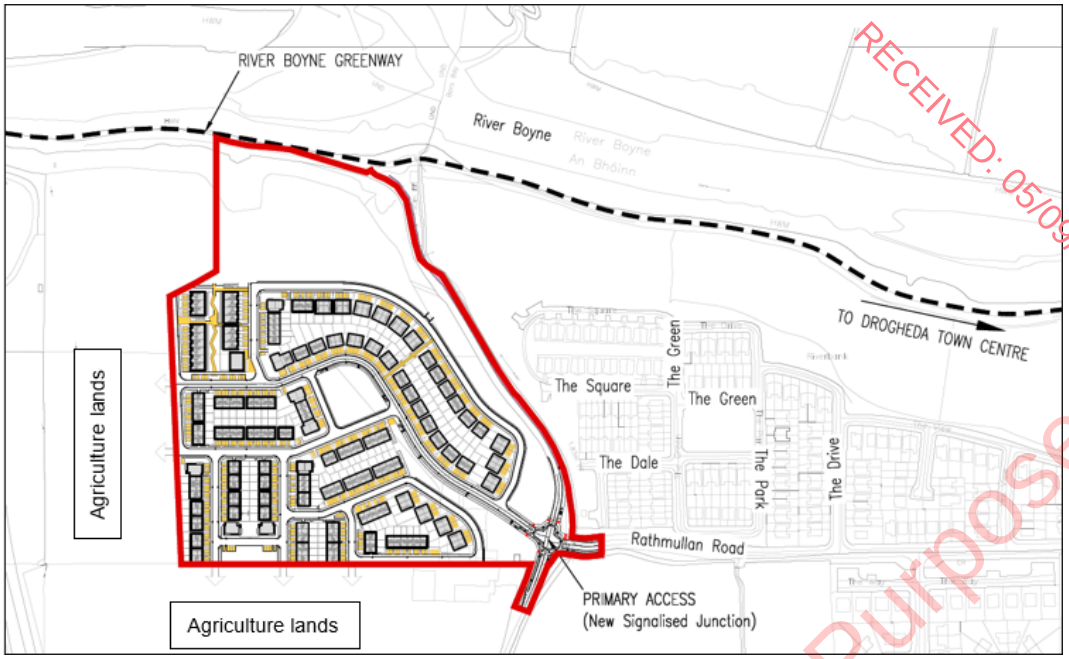

*Figure 13-1 Land use (Source: Land Use Zoning Objectives website)*

**Site Location and Description**

The site is located on Rathmullan Road in Drogheda, Co. Meath. It is situated approximately 2.5km west of Drogheda town centre.

The overall site is bound to the south and west by agricultural land, as can be seen in Figure 13.2 below. To the north-east the site is bounded by existing residential development, consisting of two-storey terraced houses and three-storey duplexes. The site is bound to the north by Rathmullan Road and the Boyne. River.

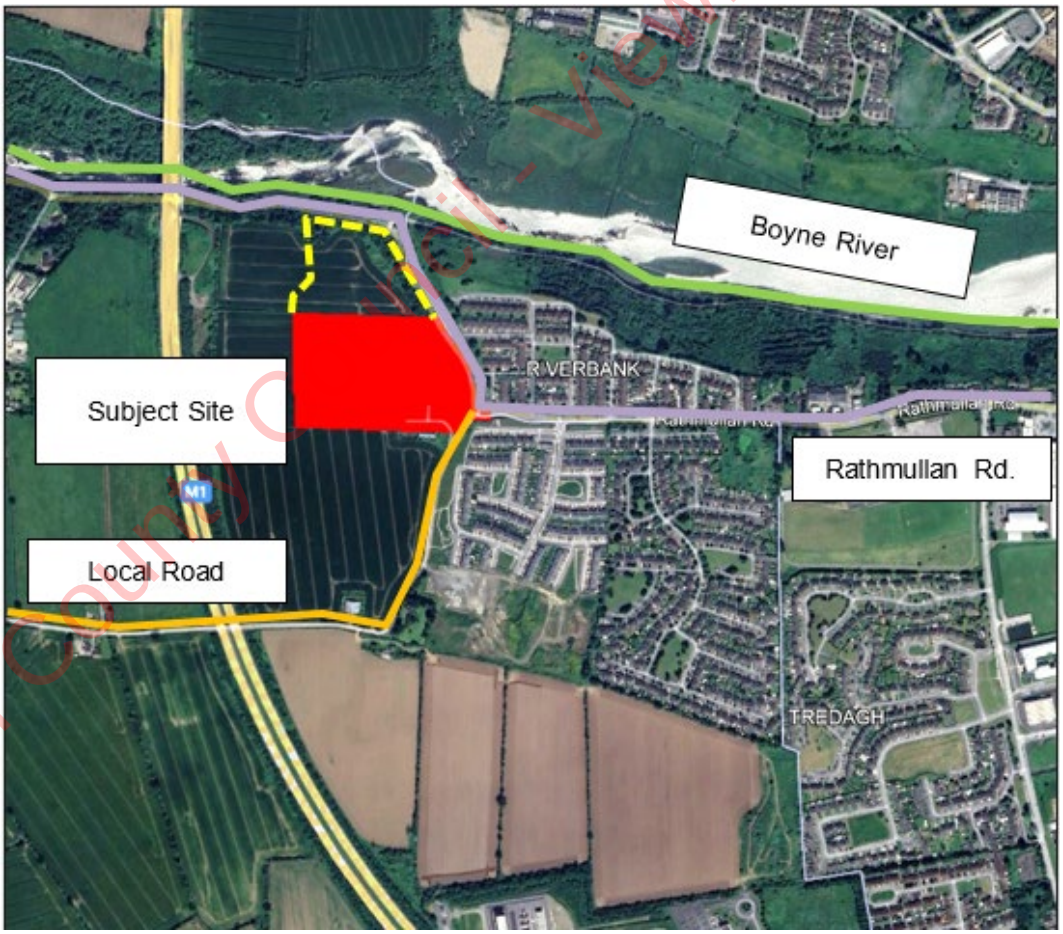
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*Figure 13-2 Site Location – Red Line and residential development*

The location of the site and its principal surroundings are shown in Figure 13-3 below.




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*Figure 13-3 Site Location – Main roads and residential area*

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### Local Road Network

The key roads in the surrounding area are shown in Figure 13-4 and described below.

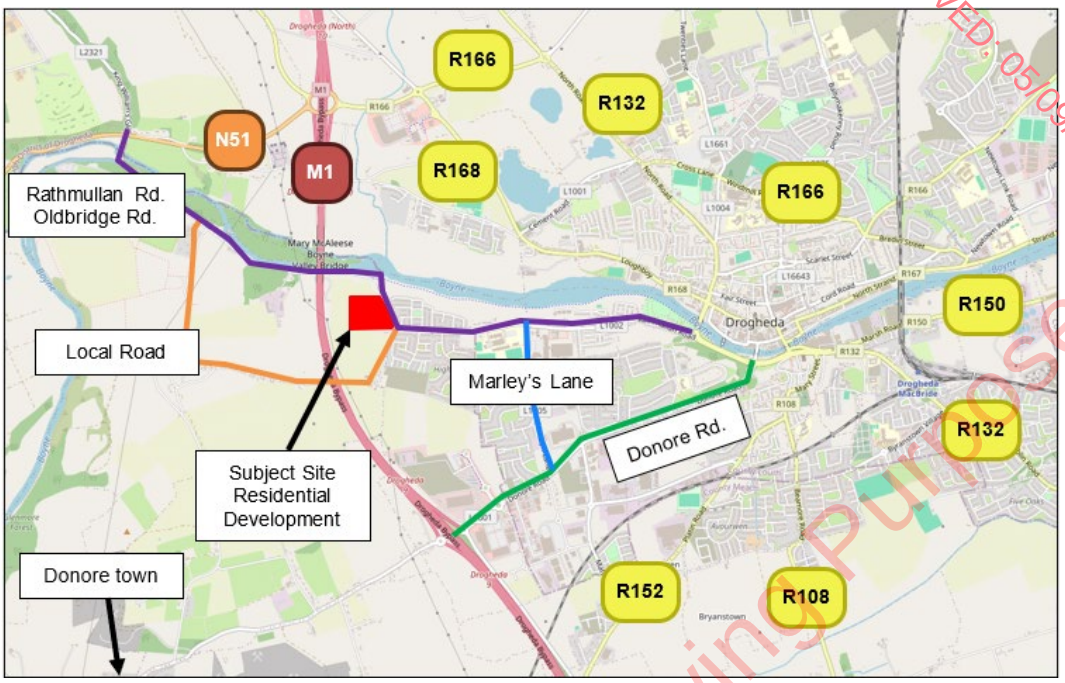



*Figure 13-4 Existing Roads (Source: Open Street Map)*

The main access to the site is via a proposed signalised crossroad located at the junction of Rathmullan Road and the Local Road. Both roads are subject to a speed limit of 50km/h.

From the site access road, travelling eastwards, Rathmullan Road runs for 2km, ending at a controlled priority T-junction with the R132. This junction provides access to the Bridge of Peace in Drogheda via the R132.

From the site access road in a northerly direction, the Rathmullan Road / Oldbridge Road forms the eastern boundary of the site. This road turns west and runs parallel to the Boyne River to the Obelisk Bridge.

From the junction between Rathmullan Road the Local Road, in a southerly direction, the local road crosses the M1 motorway over a bridge and continues west, providing access to various rural properties, agricultural land and the town of Donore via local roads.

The **Rathmullan Road**, along the section between the site and the R132, generally has a width of 7.3 meters, with footways running along both sides for the majority of its length. The Rathmullan Road bounding the site to the north of the site access road is a rural road with a carriageway width of approximately 4 meters.

The **Local Road** is a rural road with a width of c.4 m.

To the east of the site is located a signalised crossroad between Rathmullan Road and Marley's Lane. This junction is approx. 800m away from the site.

**Marley's Lane** runs north-south between Rathmullan Road and Donore Road. The junction between Marley's Lane and Donore Road is a signalised junction. Marley's Lane is subject to a speed limit of 50km/h. It has a width of 7.3m with a number of traffic islands acting as traffic

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calming and with footways on both sides. The speed limit on Donore Road is 50 km/h. From Marley's Lane, Donore Road extends eastwards to the R132, which is a signalised crossroads. To the west, the road connects to the M1 motorway at Junction 9.

The **Boyne River Boardwalk** runs along the southern bank of the Boyne River. This is a shared pedestrian / cyclist route that provides access to Drogheda Town Centre and Oldbridge. The distance between both bridge along Boyne River is c. 4.3km.

The **M1 Motorway** runs from Dublin to Belfast serving towns including Dundalk, Balbriggan, and Skerries.

The **R132** Regional Road runs north from Drogheda, continuing through Dunleer and Castlebellingham to Dundalk, where it joins the N52. The R132 is the former N1 route (now by-passed by the M1 motorway).

The **R168** runs to the east of the site between the N51 and Drogheda Town Centre.

The **R152** Regional Road runs south from Drogheda Town Centre, by Duleek, before joining the national road N2 towards to Ashbourne.

The **R108** Regional Road also runs south from Drogheda Town Centre, leading directly through Ballymun before intersecting with the M50 in Dublin.

**Existing Junctions**

The main junctions in the local surrounding area are illustrated in Figure 13-5 below.

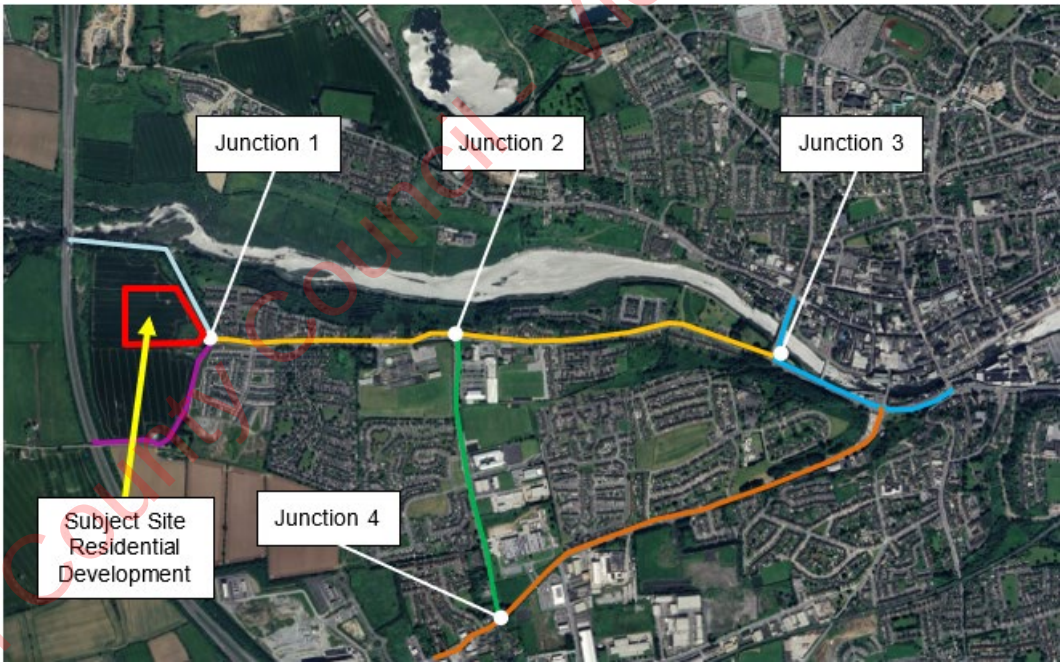



*Figure 13-5 Primary Local Junctions (Source: Google Earth)*

Each junction is described in more detail below:

- Junction 1: existing priority-controlled T-Junction located at the intersection of Rathmullan Road and Local Road.

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- Junction 2: existing signalised T-junction located at the intersection of Rathmullan Road and Marley's Lane.
- Junction 3: existing priority-controlled T-junction located at the intersection of Rathmullan Road and R132 Dublin Road.
- Junction 4: existing signalised T-junction located at the intersection of Donore Road and Marley's Lane.

**Surveyed Traffic Flows**

To quantify the volumes of traffic movements at the key junctions, a traffic survey was commissioned by the applicant and carried out by Traffinomics on Tuesday 14th January 2025, for a period of six hours during both peak hours.

The surveys were carried out on the above date to ensure that the flows were representative of a normal term and therefore not affected by school holidays or other public holidays or events. As such, they provide a reasonable representation of a neutral month during a period of normal school and work activity. The surveys are designed to provide representative values covering morning and evening periods during normal traffic conditions

The results of the survey indicate that the peak traffic levels through the junctions occurred between 08:00 and 09:00 in the morning and between 17:00 and 18:00 in the evening. These peak hour traffic volumes can be seen in Figure 13-6 below.

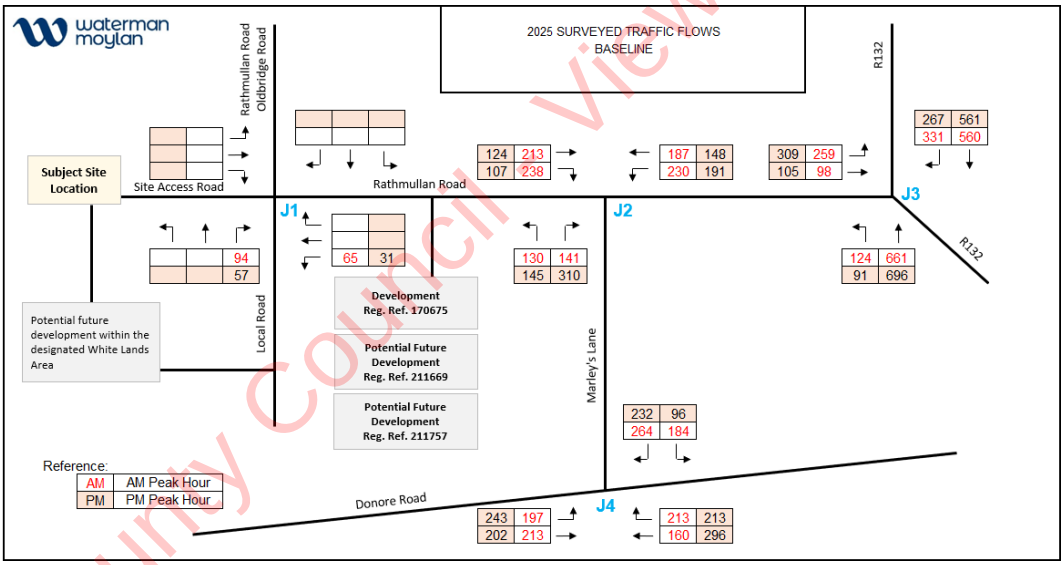



*Figure 13-6 2025 Surveyed Traffic Flows – AM and PM Peak Hour Flows (Source: Traffinomics)*

The number of vehicles depicted in Figure 13-6 above is expressed in PCU, where PCU represents the acronym for "Passenger Car Unit." One PCU is equivalent to one passenger car or light goods vehicle (LGV), 1.5 PCUs to one medium heavy goods vehicle (Medium HGV), two PCUs to one bus, and two PCUs to one large heavy goods vehicle (Large HGV). One PCU is equivalent to 5.75m.

**Multi-modal access to the site**

<u>Pedestrian Infrastructure and Walking Accessibility</u>

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The key to pedestrian accessibility is the provision of short, convenient, and safe routes. Walking is the most common mode of transport. Almost all journeys involve some walking, so improvements to pedestrian facilities can have a wide impact.

The "Guidelines for Providing for Journeys on Foot" published by the Institution of Highways & Transportation in 2000, indicates that the acceptable walking distances vary between individuals and circumstances. These include an individual's fitness, physical ability, and personal motivation; the size of the town itself and the quality of the surrounding footpath network. Furthermore, the document proposes walking distances and times based on an average walking speed of 1.4 metres per second (approximately 400m in five minutes) Table 13-1 below provides a summary of these suggestions.

*Table 13-1 Table and figure formatting (Source: Guidelines for Providing for Journeys on Foot - Institute of Highways and Transportation)*

| | Town Centre | Commuting / School / Site Seeing | Elsewhere |
|---|---|---|---|
| **Desirable** | 200m (2.5-mintues) | 500m (6-minutes) | 400m (5-minutes) |
| **Acceptable** | 400m (5-minutes) | 1,000m (12-minutes) | 800m (12-minutes) |
| **Preferred Maximum** | 800m (10-minutes) | 2,000m (24-minutes) | 1,200 (15-minutes) |

The existing pedestrian infrastructure in the surrounding urban area comprises a well-connected network of footpaths along Rathmullan Road, to the east of the site access road. This network provides access to Drogheda Centre via the Bridge of Peace Drogheda. Rathmullan Road is characterized by footpaths on both sides and pedestrian crossings at all intersections, linking with the internal roads and streets of neighbourhood developments, schools and grocery stores. The extensive interconnection of the network allows for greater flexibility in pedestrian transportation.

On Rathmullan Road / Oldbridge Road to the north of the site access road, there is a lack pedestrian and cycling infrastructure. On the rural road to the south of the site access road there is cycle and pedestrian infrastructure on the east side of the road along the recently finished development to the east of the Proposed Development (Planning Application Reg. Ref. No. 170675).

Figure 13-7 below illustrates the considerable extent of the pedestrian catchment areas accessible from the Proposed Development, for different walking times, namely 10 minutes, 15 minutes, and 24 minutes.

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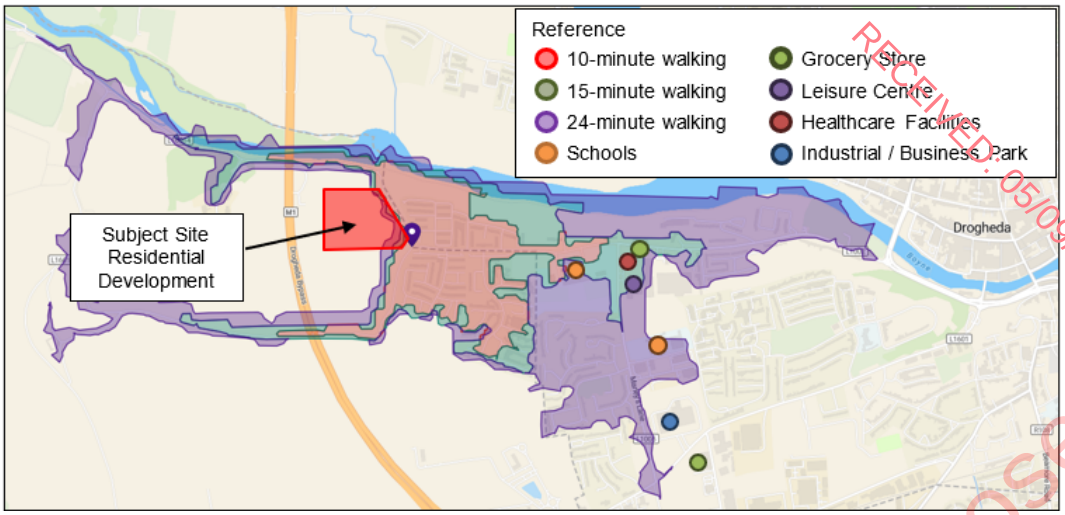



*Figure 13-7 Isochrone map indicating Walking Accessibility (Source: Smappen app and google maps)*

The Proposed Development is in close proximity to various amenities, including a grocery store, a healthcare facility, an industrial park and multiple educational institutions.

Cycle Infrastructure and Cycling Accessibility

The vicinity of the Proposed Development is equipped with cycle infrastructure, as shown in Figure 13-8 below.

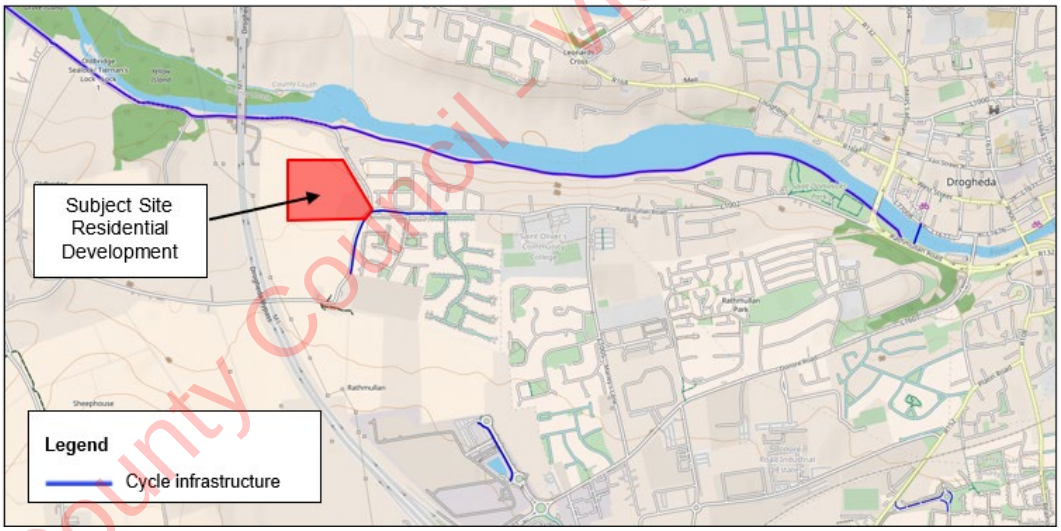



*Figure 13-8 Existing Cycle facilities (Source: Open Street Map)*

As can be seen in the image above, there is a greenway along the Boyne River with cycle infrastructure. In addition, there is a new cycle path along the rural road and Rathmullan Road made by the recently completed development to the east of the Proposed Development (Planning Application Reg. Ref. No. 170675).

A similar catchment exercise has been conducted for the cycling mode of transport, in accordance with the methodology previously employed for walking. The average cycling speed was calculated to be 3.3 metres per second (equivalent to 15 kilometres per hour). Figure 13-9 below presents the catchment area for the 10-, 15- and 24-minute cycling time

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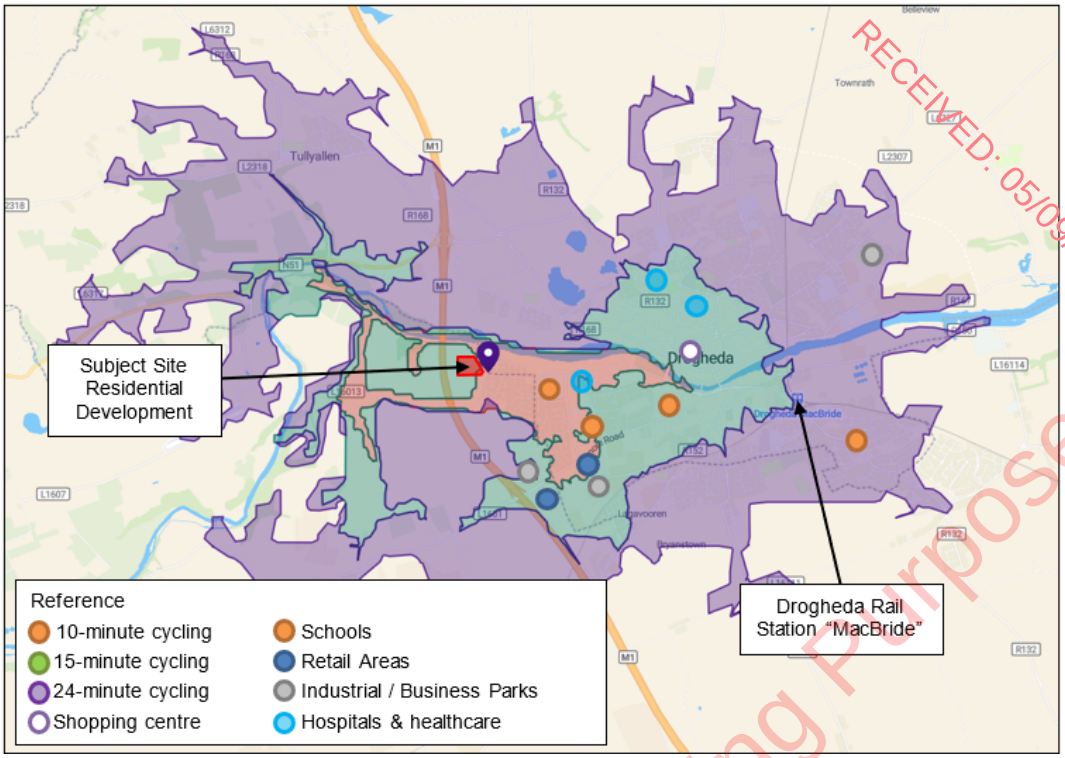



*Figure 13-9 Isochrone map indicating Cycling Accessibility (Source: Smappen app and google maps)*

A number of schools, retail areas and industrial/business parks are located within a 10-minute cycling distance. Drogheda city centre, which includes Drogheda Main Hospital and Drogheda MacBride Station, is situated within a 15-minute cycle distance.

Bus Network

There are several existing public transport services in the vicinity of the Proposed Development site. Figure 13-10 below shows the bus stops located in the vicinity of the Proposed Development, followed by the bus routes served by each bus stop and their distance from the site and Table 3 below indicates the weekday frequency of the bus route.

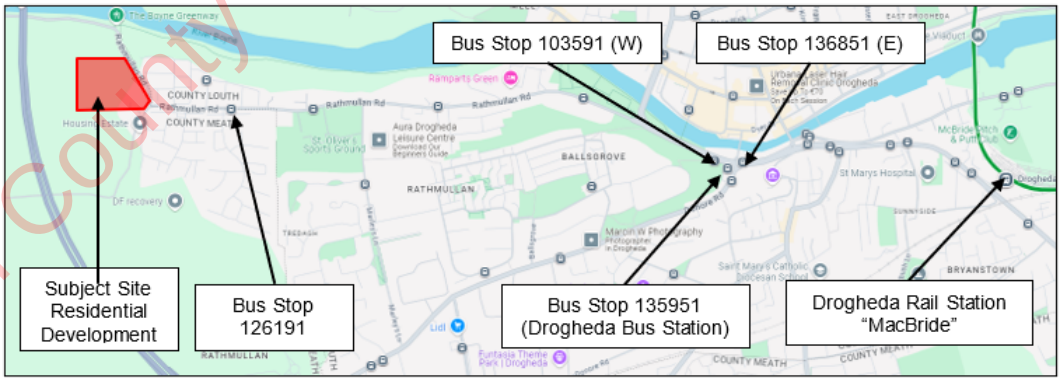



*Figure 13-10 Location of Closest Bus Stops (Source: Transport for Ireland)*

Bus Stop 126191: Located at Rathmullan Road is a 350m or 4-minute walking. This bus stop is served by Bus Eireann Route 173.

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The Drogheda Bus Station and the nearest bus stops are located at the intersection of Donore Rd. and George's St. It is 2.4km from the Proposed Development. This distance can be reached in 33-minute walking, or 11-minute cycling or 5-minutes on bus (bus route 173). This bus stop is served by various Bus Eireann routes, including 100, 100x, 101, 101x, 105, 168, 182, 182a, 190, D1, D2, D4, and D5, as well as Local Link LMF routes 163 and 188.

*Table 13-2 Bus Routes – Frequency Table (Source: Transport for Ireland)*

| Route No. | Route Name | Frequency |
|---|---|---|
| **Bus Stop 126191** | | |
| 173 | Drogheda West St - Dominick St. | 11 service every hour between 9:00 and 19:00 |
| **Bus Stop 135951** | | |
| 188 | Drogheda, Hospital - Kildalkey Road, Athboy Church Car Park | 8 services 6:30, 8:00, 11:00, 13:00, 15:00, 19:00 and 21:00 |
| 100 | Drogheda - Dundalk - Newry | Every hour between 06:45 and 18:00 |
| 100X | Wilton Tce - Airport - Dundalk | Every hour between 06:40 and 0:55 |
| 100X | Dundalk - Airport - Wilton Tce | Every hour between 6:00 and 22:10 |
| 101 | Drogheda - Dublin - Airport | Every 20-30 Minutes between 05:20 and 23:00 and every hour between 23:00 and 5:00. |
| 101X | Termon Abbey - Drogheda - Wilton Tce | 5 services 5:54, 6:22, 6:42, 6:57 and 7:12 |
| 101X | Wilton Tce - Drogheda - Termon Abbey | 4 services 17:44, 18:24, 18:54 and 19:14 |
| 105 | Drogheda - Ashbourne - Blanchardstown | Every hour between 5:30 and 20:30 |
| 168 | Annagassan - Dundalk | 10 services between 7:00 and 23:30 |
| 182 | Drogheda - Collon - Ardee - Monaghan | Every two hours between 8:10 and 20:10 |
| 182a | Drogheda - Hosptial - Ardee | Every two hours between 7:10 and 17:10 |
| 190 | Drogheda - Navan - Trim | Every hour between 5:30 and 23:30 |
| D1 | Drogheda - Laytown | Every 30 minutes between 5:30 and 0:00 |
| D2 | Drogheda - Laytown via coast Road | Every 30 minutes between 5:30 and 23:30 |
| **Bus Stop 136851** | | |
| 163 | Drogheda - Donore | 5 services 9:07, 11:27, 13:27, 16:37 and 17:52 |
| D4 | Ballymakenny - Southgate SC | Every 20-30 minutes between 6:10 and 23:14 |
| D5 | Termonabbey - Colpe Road | Every 30 minutes between 6:30 and 22:40 |
| **Bus Stop 103591** | | |
| 168 | Kildalkey Road, Athboy Church Car Park - Drogheda, Hospital | 8 services 7:35, 9:00, 12:00, 14:00, 16:00, 18:00, 20:00 and 22:00 |
| D4 | Southgate SC - Ballymakenny | Every 20-30 minutes between 6:10 and 23:14 |
| D5 | Colpe Road - Termonabbey | Every 30 minutes between 6:30 and 22:40 |

For bus stop 135941 (Drogheda bus station), only buses that start at or pass through this bus station have been considered, buses ending its route at the bus station have not been included

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in the Table 13-2 above. However, it is important to note that public transport users, including residents of the subject site, have access to additional bus routes beyond those listed in Table 13-2 above.

As can be seen from the table above, the town of Drogheda is well served by a bus system strong connectivity and accessibility to surrounding areas, including the coast, Northern Ireland, Dublin City, and Ireland's international airport. Some examples of possible routes are given below:

Dublin Airports:

- Route 101: 70 minutes.
- Route 100x: 30 minutes.

Dublin City:

- Route 101: 120-minute.
- Route 100x: 75 minutes.

Navan:

- Route 188: 40-50 minutes.
- Route 190: 40-50 minutes.

Dundalk:

- Route 100x: 35 minutes.
- Route 100: 45 minutes.
- Route 168: 110 minutes.

Laytown:

- Route D2: 16 minutes.
- Route D1: 20 minutes.

Rail Network

The nearest rail station to the Proposed Development is the Drogheda MacBride Station. This rail station is located c. 3.7km to the east of the site. This distance can be reached in 50-minute walking, or 16-minute cycling or 13-minutes driving (see Figure 13-10 above). This rail station is served by Commuter Rail services with connections to the Dart, as indicated in Figure 13-11 below.

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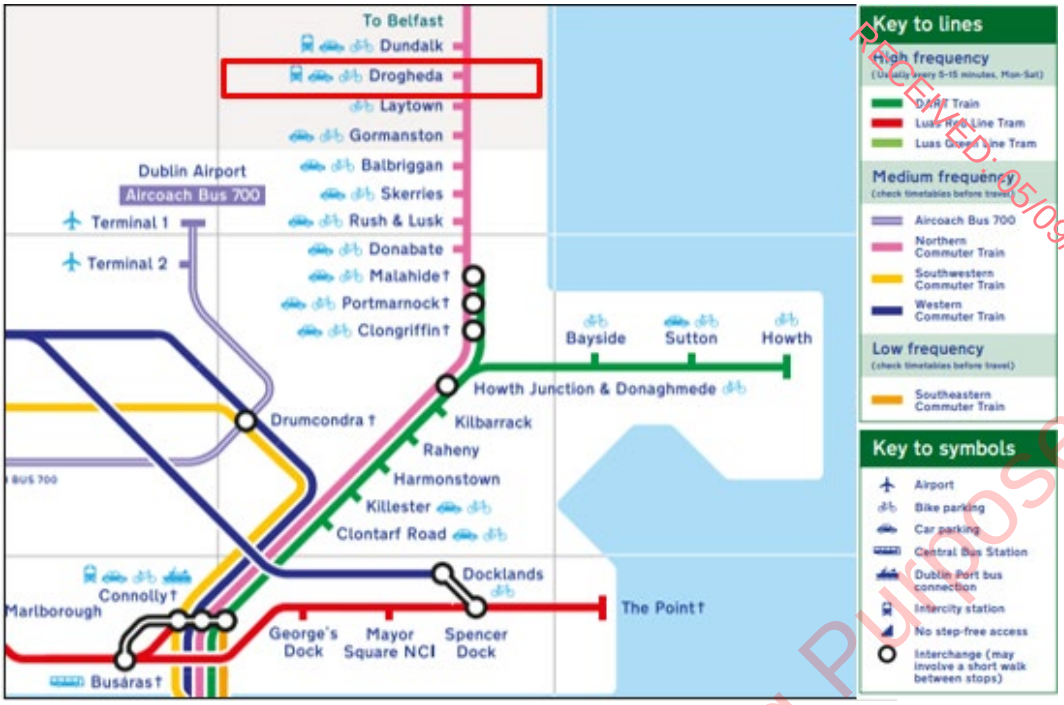



*Figure 13-11 Location of Bus Station (Source: google maps)*

The trains from this station facilitate services that allow for good connection to other onward destinations both north and south. Services generally operate with 30-minute frequencies during the peak hour morning and evening commuter periods.

The train routes serving Drogheda are outlined below:

- Belfast – Dublin Connolly
- Dublin Connolly - Belfast
- Drogheda/Dundalk – Dublin Commuter (S)
- Dublin - Drogheda/Dundalk Commuter (N)
- Rosslare Europort – Gorey – Dublin Connolly (NW)

The Table 13-3 below indicates the main routes to and from Drogheda MacBride Station.

*Table 13-3 Train through Drogheda Train Station (Source: Transport for Ireland and Irish Rail)*

| Route | Frequency |
|---|---|
| Belfast - Dublin Connolly | 8 services 7:21, 8:22, 12:07, 14:07, 15:40, 17:41, 19:41 and 21:41 |
| Dublin Connolly - Belfast | 8 services 8:12, 10:06, 11:55, 13:56, 15:55, 18:21, 19:34 and 21:29 |
| Drogheda/Dundalk – Dublin Commuter (S) | Every 30 minutes between 8:50 and 22:05 |
| Dublin - Drogheda/Dundalk Commuter (N) | Every 30 minutes between 5:50 and 00:50 |
| Rosslare Europort – Gorey – Dublin Connolly (NW) | 2 services 5:03 and 9:52 |

From Drogheda MacBride there are good connections to both Dublin to the south and Belfast to the north.

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The travel time from Drogheda MacBride Station to Connolly Railway Station (Dublin) is approximately 30 minutes on the intercity Belfast-Connolly service and approximately 1 hour on the commuter service.

The travel time from Drogheda MacBride Station to Belfast Lanyon Place is approximately 70 minutes on the intercity Connolly – Belfast.

**Proximity to Amenities and Employment Areas**

Dublin Airport: The site is approximately 40 km from the Dublin Airport, with an average travel time of 30-minutes by vehicle.

In terms of public transport, there are two options to get to Dublin airports: Route 100X every hour and Route 101 every 20-30 minutes. The former takes 30 minutes and the latter 70 minutes to reach Dublin Airport.

Industrial / Business Parks: The Proposed Development is located close to three industrial and business park as shown in Figure 13-9 above. These sites fall within a 24-minute cycling catchment area. Additionally, one of them can be reached within a 30-minute walk, as illustrated in Figure 13-7 above.

Town Centre & Shopping District: Approximately 2.5km to the east of the site is situated Drogheda town centre, which offers a number of small and medium sized businesses including discount stores, banks, food outlets, clothing stores, convenience stores and shopping centres.

The shopping mall centre is located approximately 2.6km to the east of the development. This distance can be reached in 36-minute walking, or 11-minute cycling or 7-minutes on bus route 173.

**Existing Travel Patterns**

To understand the vehicle ownership and mode of travel selection of the residents in the area, public information from the Census 2022 was used. The Census was conducted by the Central Statistics Office on 3rd April 2022, and distributed information in small areas that divide the territory.

For this report, 7 representative areas have been selected to reflect the Subject Site. It is important to choose a range of areas to obtain an average value that will allow us to approximate the future behaviour of the inhabitants in the residential development. The consulted Small Areas are illustrated in Figure 13-12 below.

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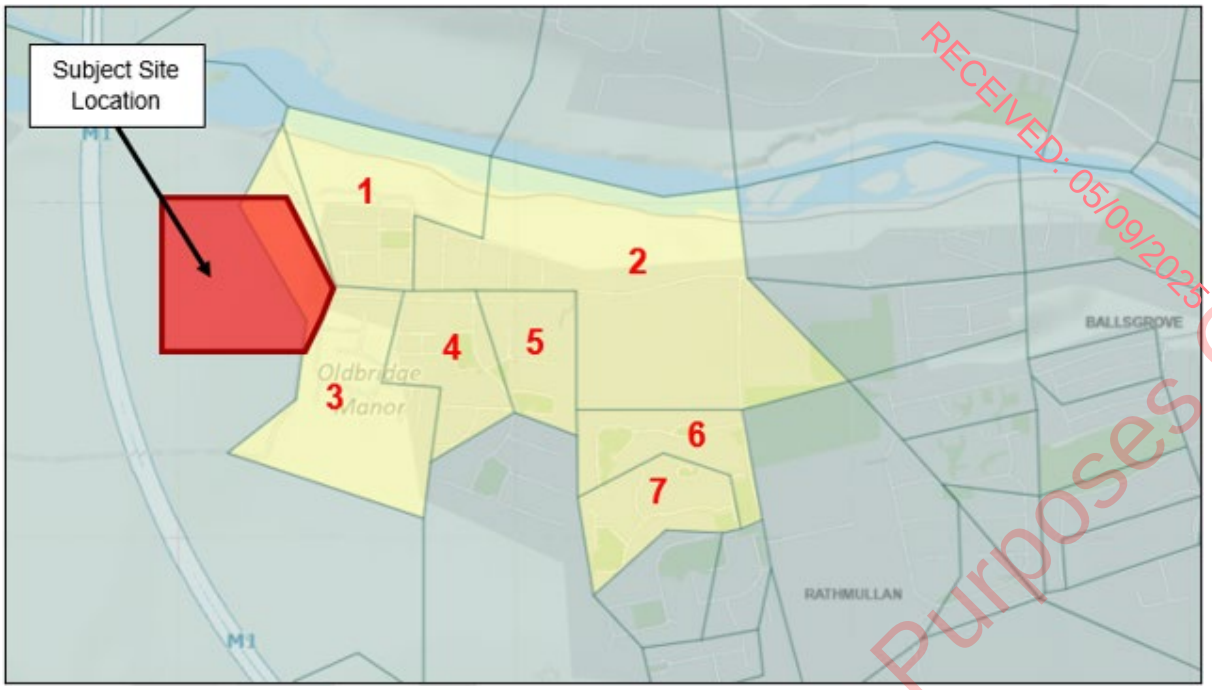



*Figure 13-12 Consulted Small Areas - Census 2022*

The results of the consultation carried out in Census 2022 indicate that the modal split in the selected small areas is as follows: 61.4% travel by car, 13.8% use public transport, 22.9% travel on foot, and 1.9% cycle.

In addition, the results show that the total of 2.488 people living in 808 hoses, there are 957 vehicles, which equates to 2.6 people per car and 1.18 cars per dwelling unit.

### 13.3.2 Transportation improvements

**Road and Junctions**

Local Road

As part of the planning application Reg. Ref. No. SH305552, the realignment and upgrading of the Local Road was proposed. This upgraded road extends from the site access road (Junction 1 – Figure 13-5 above) to the south, adjacent to the eastern and southern boundaries of the site.

This road will form part of the proposed development's arterial link with a carriageway width of 7m and new kerb lines, road gullies and drainage. The proposed speed limit on this road is 50 km/h.

In addition, a separated cycle track (2.0m wide) and footpath (2.0m wide) are also proposed along the extents of the Local Road bounding the site.

Rathmullan Road – Shared Footway / Cycleway

In July 2022 Meath County Council submitted a Planning Application to An Bord Pleanála for the construction of a proposed shared footway/cycleway located on the Rathmullan Road. On 22 May 2024, An Bord Pleanála decided to approve with conditions.

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It was proposed to construct a 3m wide shared footpath/cycleway on the eastern side of the Rathmullan Road. The proposed footpath/cycleway measures c.380m in length, stretching from a junction on the Rathmullan Road to the south adjacent to Riverbank Housing Estate to the River Boyne Greenway located to the north. The footway/cycleway will provide a direct linkage to the Boyne Greenway from communities on the west side of Rathmullan. Figure 13-13 below shows the proposed roadway.

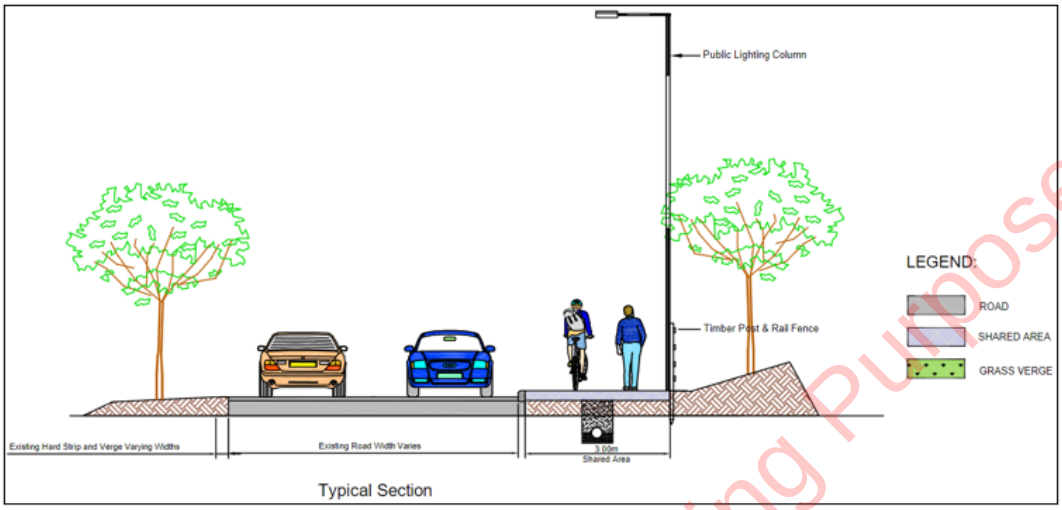



*Figure 13-13 Rathmullan Road – Proposed Shared Footway / Cycleway – Typical Section (Source: Construction of a Shared Cycleway/Footway on the Rathmullan Road)*

In January 2025, Waterman Moylan conducted a comprehensive visual survey of Rathmullan Road. The survey included the documentation of the current conditions through a series of photographs, which are presented in Figure 13-14 below.

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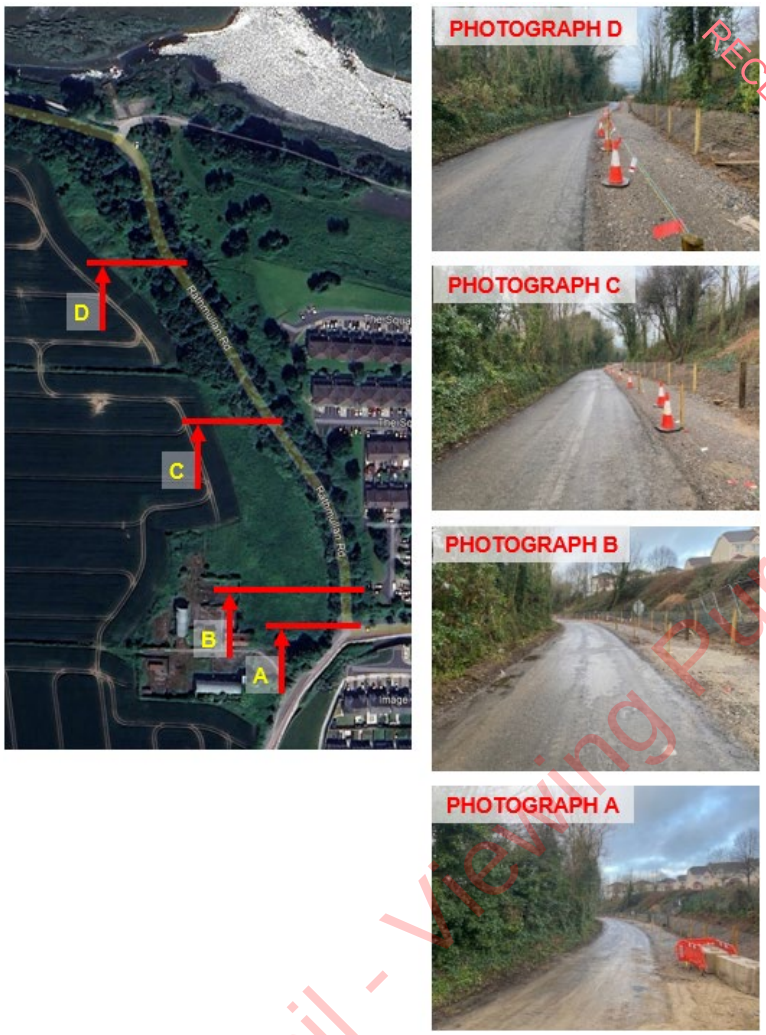



*Figure 13-14 Rathmullan – Road Shared Footway / Cycleway*

As can be seen in the Figure 13-14 above, construction has commenced on Rathmullan Road to provide a shared footway/cycleway e. For the purpose of this report, it is anticipated that this work will be completed prior to the opening year of the Proposed Development. In addition, considering the progress of the ongoing works, it is expected that by the time construction of the subject site begins, the road improvements will be well advanced and will not pose any issue to the development of the subject site.

Rathmullan Road / Local Road Junction upgrade

As part of the current planning application, the upgrade of the junctions 1 (Rathmullan Road / Local Road) is proposed, including the access road to the site.

As part of the Proposed Development, the Junction 1 (Rathmullan Road / Local Road) is also proposed to be upgraded.

The improvement works proposed include the addition of the western approach to provide the main vehicular access to the site and the signalisation of the junction. Figure 13-15 below shows the proposed junction 1 upgraded

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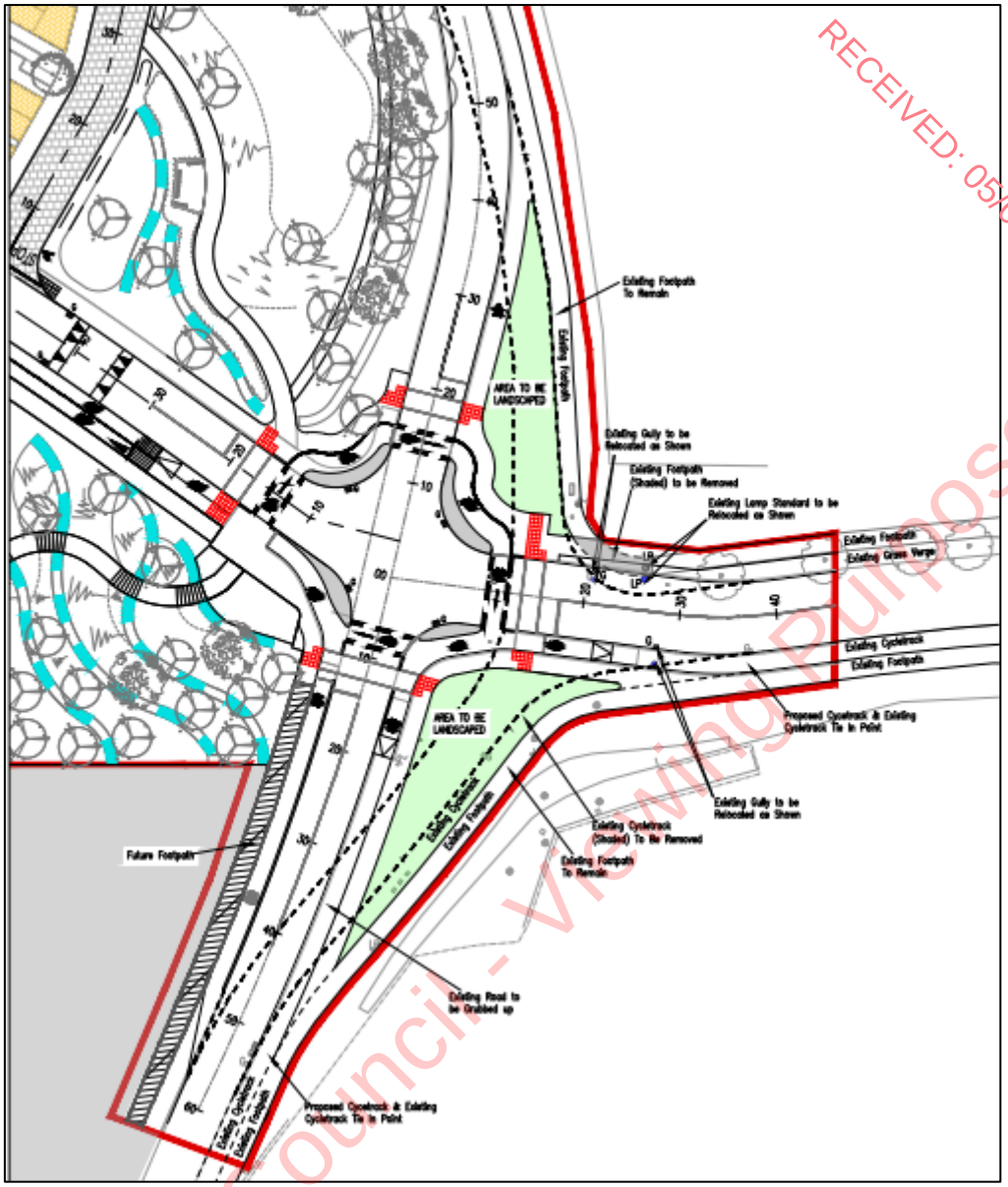



*Figure 13-15 Proposed Junction 1 (Rathmullan Road / Local Road/Site access road) upgrade)*

The upgraded junctions as a signalised crossroad, has been modelled and the results of the modelling are set out in Section 13.5.2 below

Rathmullan Road / R132 Junction Upgrade

The junction between Rathmullan Road & the R132 provides access to the Drogheda Bridge of Pace. Louth County Development Plan 2021-2027 (incl. Variations 1 & 2) identifies the need to upgrade this junction, and it has been included in Section 7.8.4 of the Louth County Development Plan 2021-2027 (incl. Variations 1 & 2) as a Local Road, Sustainable Transport and Environmental Improvement Project.

A detailed Transportation Study was undertaken in December 2006 by WSP on behalf of Drogheda Borough Council. This Study sets out improvement works that are required to be carried out on the Rathmullan Road / R132 junction (Junction 3 – Refer to Figure 13-5 above) in order to increase its operational capacity and to accommodate the potential future traffic

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demand. These improvements include the installation of traffic signals amending the current island configuration to assist movements through the junction. Details of these proposals, extracted from the Transportation Study (December 2006) can be seen in Figure 13-16 below.

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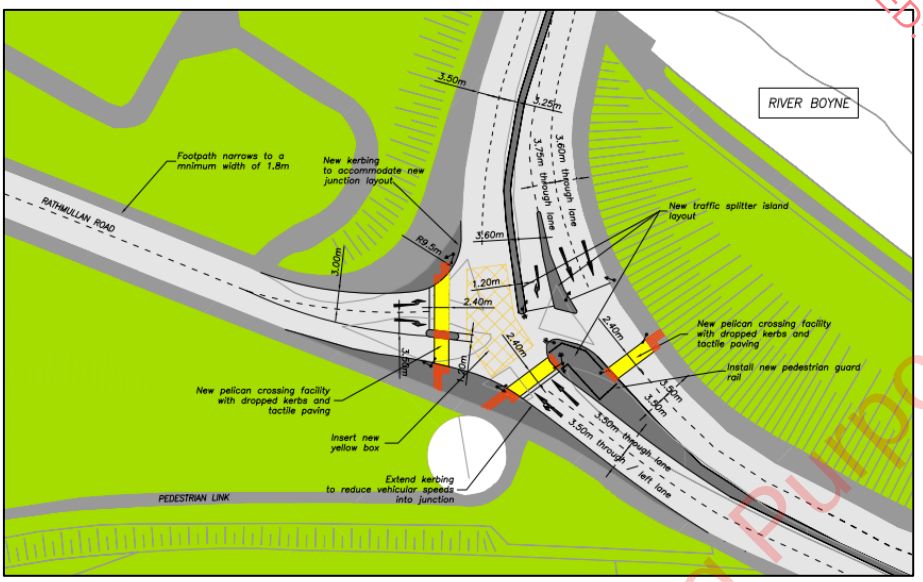



*Figure 13-16 Proposed Junction 3 (Rathmullan Road / R132) Upgrade (Source: Transportation Study (December 2006))*

**Rail Network: DART+**

Drogheda MacBride Station is located approximately 3.7km to the east of the Proposed Development (see Figure 13-10 above) and form part of the northern route of the future DART Expansion Programme. DART+ aims to extend current DART services to locations along the east coast of Ireland such as Donabate, Rush and Lusk, Skerries, Balbriggan and finally on to Drogheda (see Figure 13-17 below).

In addition, DART+ Programme aims to modernise and provide an electrified, more frequent, and reliable rail service, enhancing capacity on the rail corridor across Dublin City and Greater Dublin. DART+ offers several benefits, including:

- Increase peak passenger capacity and increase train frequency between Dublin City Centre and Drogheda MacBride Station - inclusive of the Howth Branch - facilitating frequent and reliable transport to the surrounding communities.
- Facilitate the development and future growth of existing and new communities that will greatly benefit from the connectivity that the DART+ Coastal North project will deliver.
- Build a sustainable and connected city region, supporting the transition to a low carbon and climate resilient society.
- Facilitate people to make sustainable travel choices by encouraging a move away from private cars to a reliable, efficient and safer public transport network.
- Improve multi-modal transport connectivity through the development of the wider DART+ Programme.

The DART train currently stops at Malahide station. It is expected that the new service will be in operation at Drogheda MacBride Station within the next few years. According to the website, the latest update is:

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- DART+ Coastal North Railway Order application lodged with An Bord Pleanála to bring DART to Drogheda Third DART+ Line has now reached Statutory Planning Phase.

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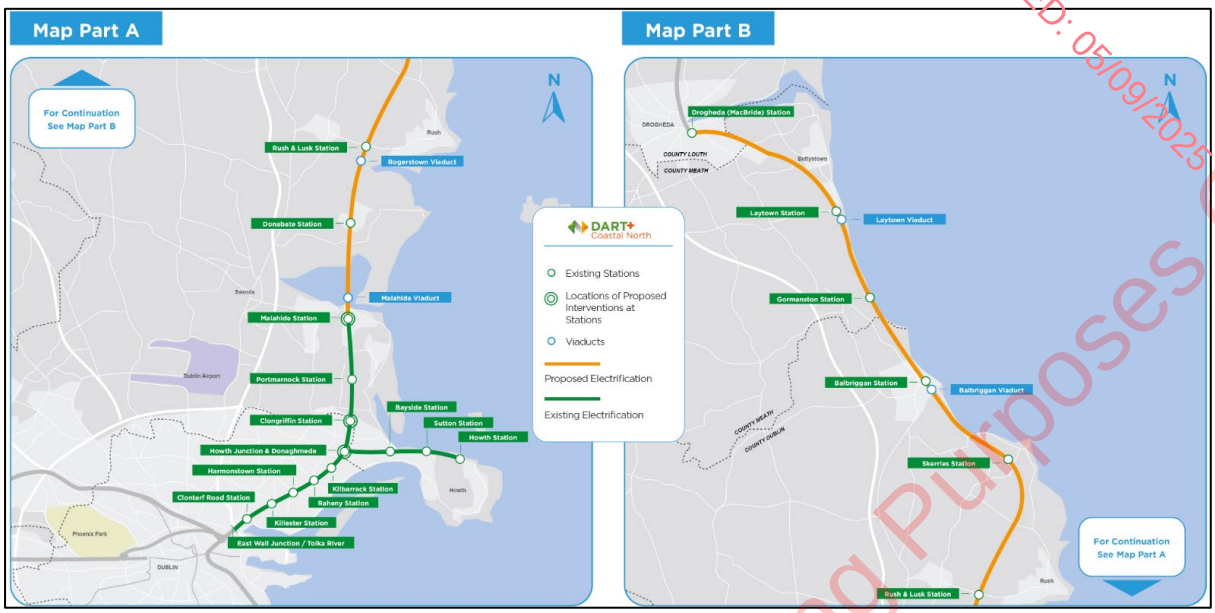



*Figure 13-17 Dart Expansion Programme (source DART+ website)*

## 13.4 Characteristics of the Proposed Development

### 13.4.1 Construction Phase

The purpose of this section is to evaluate the potential impact on the surrounding area during the construction phase. Whilst it is not possible at this stage to accurately identify the day-to-day traffic movements associated with the construction activities, based on the experience of similar sites it is considered the following take place:

- The work schedule is based on a 9-hour day between 08:00 - 17:00. Workers should therefore arrive on site before 08:00 and leave after 17:00.
- 20 working days per month.
- Conservatively assuming removal trucks will only operate Monday to Friday and between 8:30-12:00 and 13:00-16:30. This means that they will be working for 7 hours a day.
- Preliminary excavation volume calculations indicate that approximately 20,753m$^3$ of soil will need to be removed during the excavation phase. This estimate includes the removal of the topsoil, and the balancing of cut and fill volumes within the site. To provide a robust estimation, it is assumed that an additional 20% of soil is to be removed from the site. Therefore, a total of 25,000m$^3$ of soil will be removed during the excavation phase.
- It is assumed that a Rigid HGV carries up to 20 tonnes in terms of payload. Considering a typical soil bulk density of 1.3 this would equate to approx. 15m$^3$ per load.
- Soil movement activities are anticipated to take the first 4 months.

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- It is assumed that general HGVs trips will range from 10 no. to 20 no. trips per day. Materials will be ordered and delivered to site on an "as needed" basis to prevent oversupply to site.
- Average workforce will be 120 workers. A peak increase of around 40 additional workers over a 4-month period. Between 60%-70% of them will arrive with their private vehicle or by carpooling.

The worst-case scenario for HGV movements to / from the Proposed Site is estimated to occur during the movements of soil. Based on the above, this scenario will involve approximately 38 two-way trips per day: It will involve some 1,667 No. trips over an 88-day period (four months). This equates to an average of 19 No. trips to/from the site (38 two-way trips). Considering the schedule of the removal trucks (seven hours a day), there will be three trips per hour (six two-way trips).

The general workforce is expected to be approximately 120 No. people per day, rising to 160 No. people at peak times. Given the location of the Proposed Development and considering the worst-case scenario, it is estimated that approximately 60-70% of the workforce will travel to/from the site by private car. This proportion of workers includes people who travel alone, people who share their car with other co-workers, and company vans. As a result, it is estimated that the site will attract/generate between 75-100 No. car trips to the construction site during the morning, and the same number from the construction site during the evening. It is assumed that the workforces will arrive to the site before 8:00 and will leave the construction site after 17:00.

According to the Surveyed Traffic Flow, the peak hours on the existing road network are during the morning between 08:00 and 09:00 and during the afternoon between 17:00 and 18:00. In addition, it has been estimated that the Proposed Development when completed and fully occupied, will generate a total of 133 vehicle movements during the AM peak hour (36 arrivals and 97 departures) and 136 vehicle movements during the PM peak hour (86 arrivals and 50 departures). The junction assessment results carried out, indicate that all junctions will operate within their respective capacities for all scenarios assessed. Further information is provided in Section 13.5.2 below

Considering the above, it is expected that the traffic generated by the general workforce will occur during the peak hours, while the HGV trips will be generated outside the peak hours. In addition, the number of trips during the construction phase will be less than the number of trips during the operational phase and these trips are not expected to cause congestion problems on the surrounding road network. Therefore, no junction assessment is required for the construction phase.

Deliveries and access to the construction site will be via M1 Motorway, as shown in Figure 13-18 below. A restriction on using any of the surrounding residential roads for Construction traffic will be put in place.

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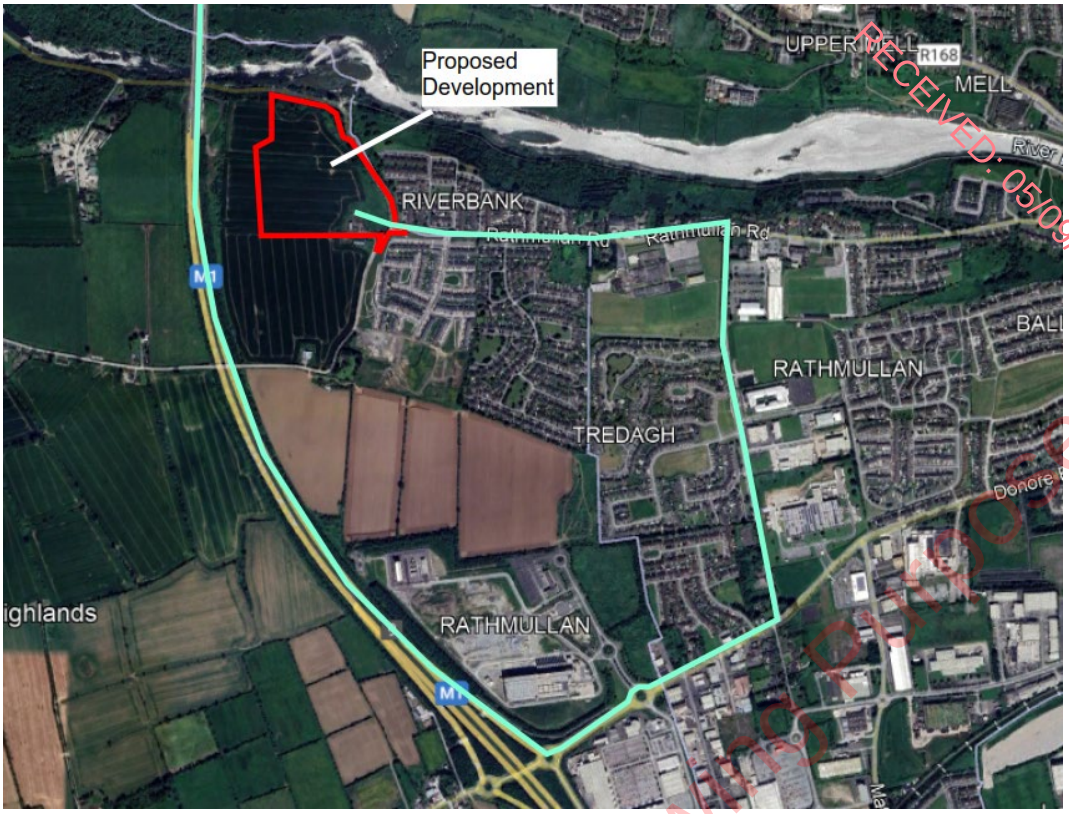



*Figure 13-18 Primary Transport Route (Source: Google Earth)*

### 13.4.2 Operation Phase

**Development Description**

A comprehensive description of the Proposed Development is presented in Chapter 2 of this EIAR

**Vehicular Access and Internal Layout**

Access to the Proposed Development is provided via a new signalised crossroad located to the east of the site, as indicated in Figure 13-15 above.

The internal layout of the Proposed Development provides pedestrian pathways to link internal units to the surrounding pedestrian network and to internal public spaces.

In addition, given that the agricultural lands located to the west and south of the Proposed Site -identified as areas designated for future development to support the expansion of the urban area (Refer to Figure 13-1 in Section 13.3.1 above)-, these lands are anticipated to be developed for residential use. Accordingly, several pedestrian and vehicular connections are proposed to integrate the subject site with future developments to the east and south. Figure 13-19 below illustrates the proposed linkages.

The internal roads have been designed to comply with DMURS as required by the County Development Plan and national Circulars RW 6/2013) and PL 17/2013, and the Sustainable Residential Development and Compact Settlements Guidelines for Planning Authorities (2024). The internal roads generally vary between 4.8m and 5.5m in width. All footpaths are 2.0m wide and connect the internal spaces.

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All internal roads within the Proposed Development are designed for a speed limit of 30km/h. The low design speeds and traffic calming measures will ensure the safe operation of these junctions and a safe/secure environment for pedestrians and cyclists.

The design and layout of the proposal has been prepared to fully comply with the current relevant design standards and specifications applicable to this form of development.

The development includes off-street and on-street car parking spaces distributed along the internal roads.




*Figure 13-19 Proposed Development – Access site and internal road layout*

**Internal Pedestrian & Cycle Facilities**

The proposed pedestrian infrastructure has been designed as a well-connected footpath network ensuing accessibility to each residential unit and to the surrounding area. This includes links to the northern Rathmullan Road shared footway/cycleway, the eastern access junction and existing road network, as well as to the east and south, where future residential developments are anticipated as part of the urban expansion outlined in the Development Plan (Refer to Figure 13-1 in Section 13.3.1 above).

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All footpaths within the Proposed Development have been designed as minimum of 2.0m wide. This is in accordance with Section 4.3.1 of the DMURS which suggests that a minimum 1.8m footpath should be provided.

The Proposed Development will provide good pedestrian and cycle links from Rathmullan Road to the east, with pedestrian and cycle links proposed through the development.

The main pedestrian and cycle path is shown in the Figure 13-20 below.

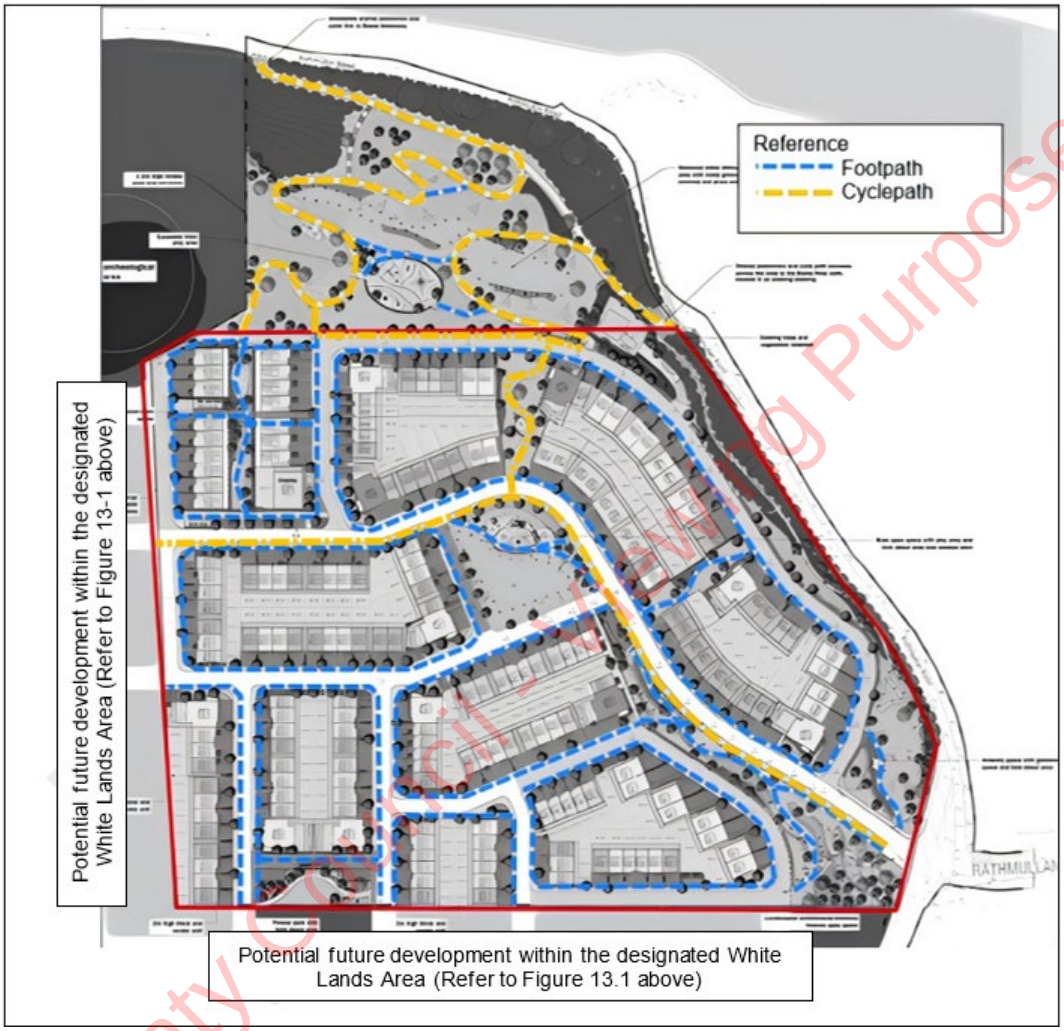



*Figure 13-20 Proposed Development – Internal Pedestrian and cycle paths*

**DMURS**

Waterman Moylan Consulting Engineers considers that the Proposed Development is consistent with the principles and guidance outlined in the Design Manual for Urban Roads and Streets (DMURS).

The internal roads have been designed to comply with DMURS as required by the County Development Plan and national Circulars RW 6/2013) and PL 17/2013, and the Sustainable Residential Development and Compact Settlements Guidelines for Planning Authorities (2024).

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The internal roads generally vary between 4.8m and 5.5m in width. All footpaths are 2.0m wide and connect the internal spaces

Footpaths are in accordance with Section 4.3.1 of the DMURS which suggests that a minimum 1.8m footpath should be provided where possible.

The proposed development includes “home-zones” / shared surfaces, which have been designed primarily to meet the needs of pedestrians, cyclists, children, and residents. The aim is to reduce the speed and dominance of cars. The “home-zones” consist of a shared-surface carriageway with a differentiated rolling surface (in texture and level) to make it easily identifiable by the driver. This was done in accordance with Section 4.3.4 of DMRUS, which indicates:

- Use a variety of materials and finishes that indicate that the carriageway is an extension of the pedestrian domain. A different finish from the rest of the pavement has been chosen to identify these areas.
- Avoid raised kerb lines. Any Kerb line should be fully embedded within the street surface. Small ramps have been used to start and terminate the shared spaces, raising them over the other pavements.
- Minimise the width of the vehicular carriageway and /or corner radii. A reduction in the width of the carriageway has been implemented, from 5.50 m to 4.80 m.

All internal roads within the proposed development have been designed with a speed limit of 30km/h. The shared road will have a speed limit of 20km/h.

The main junction within the internal roads will be priority junctions with raised tables where appropriate. Additionally, all road intersections within the development itself have been designed as priority junctions. The visibility splays of which these junctions have been designed in accordance with the requirements set out in the Design Manual for Urban Roads and Streets (DMURS), which recommends visibility splays of 23m x 2.4m on roads without bus routes. The internal junctions have been designed with low speeds to ensure safe operation.

The low design speeds and traffic calming measures will ensure the safe operation of these junctions and a safe/secure environment for pedestrians and cyclists.

The design and layout of the proposal has been prepared to fully comply with the current relevant design standards and specifications applicable to this form of development.

The development includes sufficient parallel and perpendicular parking spaces, as outlined in local guidelines (further details are provided below).

**Parking Assessment**

To determine the appropriate amount of car and cycle parking for the Proposed Development, reference has been made to the following guidelines/policies:

Design Standards for Apartments, Guidelines for Planning Authorities (July 2025).

Sustainable Residential Development and Compact Settlements Guidelines for Planning Authorities (2024).

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Meath County Development Plan 2021-2027 (Consolidated version, incl. Variations 1, 2 & 3) (MCDP).

For the car parking spaces, based on the standards and guidelines reviewed, the subject site proposes a total number of car parking spaces in accordance with the Consolidated Meath County Development Plan 2021-2027 (incl. Variations 1, 2 & 3), with a minor deviation for 1-bed and 2-bed units. The MCDP sets up a standard of two car parking spaces for each dwelling and two car parking spaces for each flat/apartment units plus a visitor car parking space per four units. However, as the 1-bed units are designed to accommodate two occupants and the 2-bed units are intended for three occupants, a reduced car parking ratio has been proposed. This reduction aligns with Section 5.7 of the MCDP, which emphasises the importance of contributing to Ireland's carbon emission reduction targets—30% by 2030 and 80% by 2050. In addition, as indicated in Sustainable Residential Development and Compact Settlements Guidelines for Planning Authorities (2024), *in order to meet the targets, set out in the National Sustainable Mobility Policy 2022 and in the Climate Action Plan 2023 for reduced private car travel, it is necessary to apply a graduated approach to the management of car parking within new residential development*.

Therefore, a total of 396 no. car parking spaces is proposed for the Proposed Development including 386 no. car parking spaces destinated for residents, 8 no. parking spaces for creche and 6 no. car parking spaces for visitors distributed throughout the development.

Furthermore, the site includes several cycling facilities, such as dedicated cycle infrastructure and bicycle storage areas to support a resilient and sustainable transport infrastructure. The proposed site includes a total number of 170 cycle parking spaces in accordance with the Consolidated Meath County Development Plan 2021-2027 (incl. Variations 1, 2 & 3).

It is well established that the availability of car parking significantly influences travel choices, including for short, local journeys. As outlined in the planning authority guidelines, *studies indicate that in areas where car parking provision is reduced, individuals are more likely to opt for walking, cycling, or public transport for their daily travel*. Accordingly, the proposed development includes a considered reduction in the number of car parking spaces, aimed at decreasing car dependency. In support of this approach, a Travel Plan has been developed to encourage residents to adopt more sustainable modes of transport, such as cycling and car-sharing schemes. Further details are provided in Section 13.6.2 below.

## 13.5 Potential Effect of the Proposed Development

### 13.5.1 Construction Phase

There is a potential for construction traffic to generate noise and dust effects on the surrounding road network. Construction deliveries to and from the site by heavy good vehicles will impact on noise levels, whilst dust may result from vehicles travelling along site roads and from general earthwork activities. There is also potential for traffic congestion, particularly during the construction of the upgraded signalised junction and also due to increased construction traffic on the road network which may also perform turning movements in areas that impact traffic. There is potential for inappropriate parking, particularly along Rathmullan Road, whilst vehicles are waiting to access the site. There is also potential for workers to park on the surrounding residential roads.

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A number of the construction traffic movements will be undertaken by heavy goods vehicles, though there will also be vehicle movements associated with the appointed contractors and their staff.

There is potential for construction traffic to have a moderate effect on the surrounding environment. However, the duration of these effects will be short to medium-term.

### 13.5.2 Operational Phase

**Trip Generation**

The potential traffic generation of the proposed development has been estimated using the TRICS software modelling database. TRICS is the national standard for trip generation and analysis in Ireland. The database system is based on surveyed traffic counts at various developments in both the UK and Ireland, which provides a reasonable indication of the potential traffic to/from the assessed developments.

Given that the TRICS software providing a large amount of survey data across a wide range of development types (from the TRICS website), a wide range of surveyed developments with similar characteristics were considered to ensure representative trip rates for the Subject Development. Filter criteria selected in the TRICS software are detailed below:

- Mixed Private Houses (Flats & Houses) to determine the trips rates were selected. This approach was adopted as fewer than 70% of the overall development consists of houses.
- Residential developments with range from 200 to 300 dwelling were considered.
- Only sites categorised as Edge of Town and Suburban Areas with similar road network, facilities and public transport services were selected.
- Developments near big cities were excluded.

The morning and evening peak hour trip rates are presented in the table 13-4 below. These rates have been derived using the TRICS Database, Version 7.11.4.

*Table 13-4 Car Trip Rates and Car Trip Generation – AM & PM Peak Hours (Source: TRICS trip rates data base)*

| Development | AM Peak Hour (08h00 – 09h00) | | PM Peak Hour (17h00 – 18h00) | |
|---|---|---|---|---|
| | Arrival | Departure | Arrival | Departure |
| **Proposed Residential** | 0.203 per unit | 0.400 per unit | 0.320 per unit | 0.190 per unit |

To provide a robust junction assessment, it has been assumed that the peak hours of the different land use categories occur during the same AM and PM peak hours.

Trip rates presented in the table above represent the trip to/from the Subject Development considering all modal splits. To ascertain the proportion of these trip rates attributable to car travel, the modal split of the surrounding area could be used (refer to Section 13.3.1 above, Existing Travel Patterns). However, in order to ensure a robust assessment, it is assumed that the Trip Rates presented in Table 13-4 above represent trips to/from the Subject Development by car only.

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Given the size and location of the proposed Crèche, it is assumed that this facility will serve to residents of the Subject Sites and the surrounding residential areas. Therefore, in general will attract active trips and non-primary drop-off/pick-up car trips. Consequently, no additional drop-off or pick-up trips have been considered for the Crèche. Regarding the staff trips, it is assumed that the facility will be made by people living on the sites and/or in the nearest neighbourhoods and they will be made by public transport or by sustainable modes (cycling or walking). Considering this, no additional trips to/from the Crèche have been considered.

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Proposed Development

The proposed developments consist of 249 No. residential units, comprising 170 No. houses, 47 No. apartments and 32 No. Duplexes. In addition, there is a Crèche with a GFA of 411 sqm.

The AM and PM peak hour trip generation to/from the proposed developments are shown in Table 13-5 below.

*Table 13-5 Car Trip Rates and Car Trip Generation – AM & PM Peak Hours (Source: Car Trips have been extracted from Planning Application Reg. Ref. No. SH305552)*

| Development | Number of Units | AM Peak Hour (08h00 – 09h00) | | PM Peak Hour (17h00 – 18h00) | |
|---|---|---|---|---|---|
| | | Arrival | Departure | Arrival | Departure |
| **Proposed Residential** | 249 | 0.145 per unit | 0.391 per unit | 0.346 per unit | 0.203 per unit |
| | | 36 | 97 | 86 | 50 |

It is estimated that the area within the subject development will generate a total of 148 vehicle movements during the AM peak hour (50 arrivals and 98 departures) and 126 vehicle movements during the PM peak hour (79 arrivals and 47 departures).

The following trip distribution assumptions have been applied:

- 85% of trips to and from the site are expected to travel westbound along Rathmullan Road. At Junction 2, it is assumed the following trip distribution:
  - 45% of the overall traffic flow will continue straight towards Junction 3, where it will further split. Based on existing traffic patterns (refer to Figure 13-5 above), some turning left towards Drogheda Town Centre, and others turning right towards the rail station and onward to the east.
  - 40% of the overall traffic flow will turn right at Junction 2 onto Marley's Lane. At Junction 4, based on existing traffic patterns (refer to Figure 13-5 above), it is assumed that 25% will turn right onto Donore Road towards the M1 Motorway (Junction 9) and the access road to Drogheda Retail Park, while the remainder will turn left towards the retail park access road.
- 10% of trips are expected to travel northbound along the new Rathmullan Road / Oldbridge Road towards the Old Bridge and further west.
- 5% of trips will travel south along the local road towards the western agricultural lands.

The traffic distribution for the AM and PM peak hour are detailed in Figure 13-21 below. The corresponding AM & PM peak hour traffic flows, based on the assumed distribution, are shown in Figure 13-22 below.

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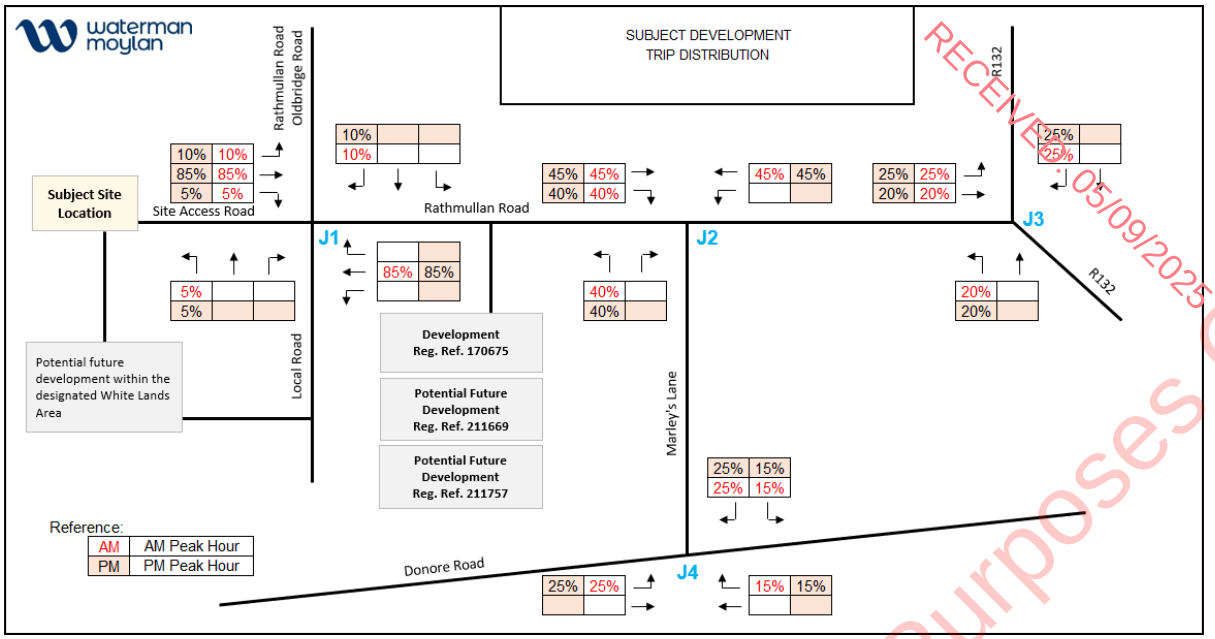



*Figure 13-21 Subject Site Trip Distribution*

Considering the trips to/from the Proposed Development indicated in Table 13-5 above, Figure 13-22 below shows the trip generation given the trip distribution described above.

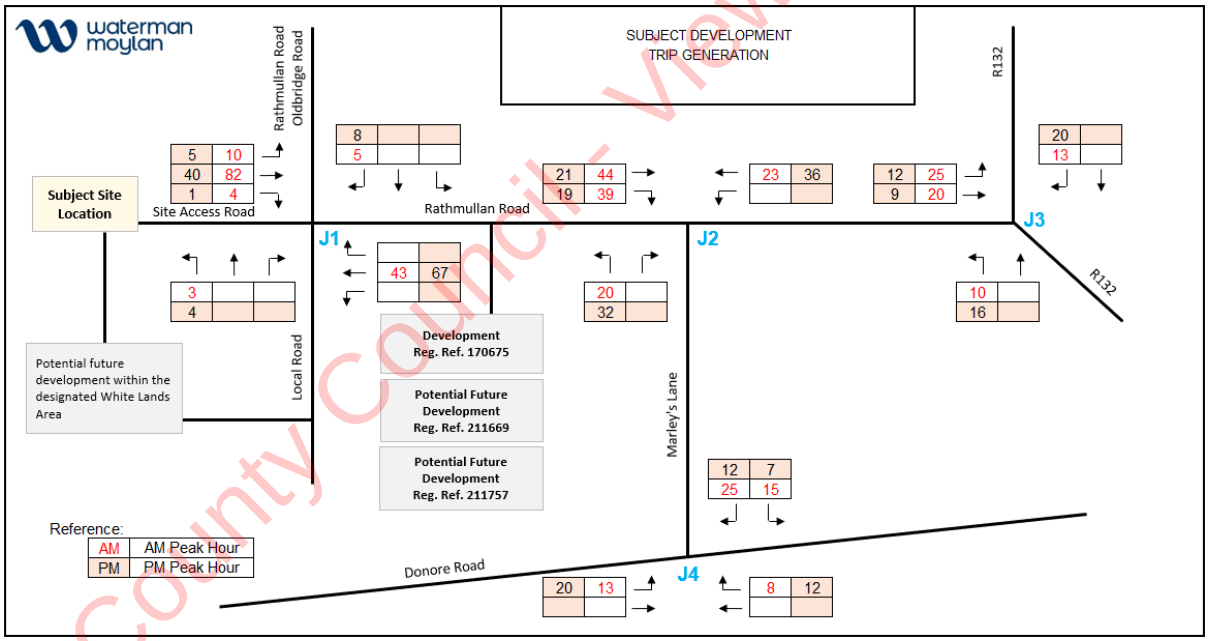



*Figure 13-22 Subject Site Trip Generation*

## Committed and Potential Future Developments

In order to provide a comprehensive assessment of the junctions, this section presents the committed and potential future developments in the surrounding area identified in the National Planning Application Database.

A 1.5km radius centred on the Proposed Development was consulted in the National Planning Application Database and the documentation that was submitted for each Planning Application

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was reviewed to identify those developments that could have a significant impact on traffic behaviour at the junctions shown in Figure 13-6 above.

The surrounding committed and Potential Future Developments are shown in Figure 13-23 below.

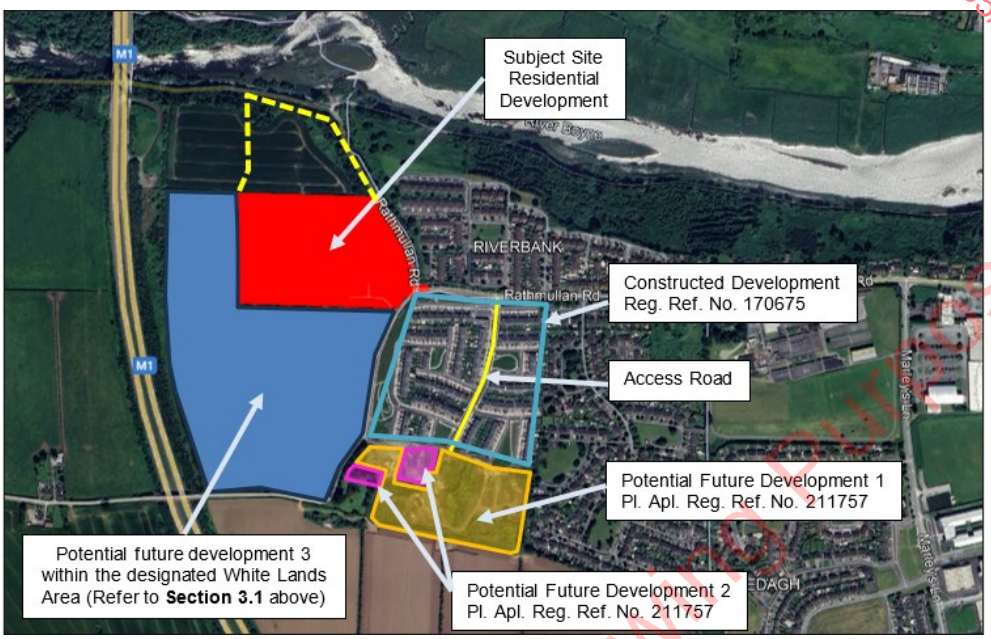



*Figure 13-23 Committed and Potential Future Developments (Source: National Planning Application Database & Google Earth)*

As results of the assessment, the Potential Future Developments which have a significant traffic impact at the assessed junction are:

- **Potential Future Development 1:** Reg. Ref. No. 211669: Residential Scheme comprising of 96 no. units located to the east of the proposed development site. Access to the site is proposed off Rathmullan Road via the internal roads of the Constructed Development.
- **Potential Future Development 2:** Reg. Ref. No. 211757: Residential Scheme comprising of 26 no. units located to the east of the proposed development site. Access to the site is proposed off Rathmullan Road via the internal roads of the Constructed Development.
- **Potential Future Development 3:** Potential Future Development within the designated White Lands Area (Refer to Figure 13-1 in Section 13.3.1 above): The designated White Lands Area encompasses approximately 13.4 hectares. As residential use is allowed in this strategic zone, and assuming an average residential density of 35 units per hectare, the area has the potential to accommodate approximately 470 residential units. Following a previous quashed planning application by the High Court, the overall potential future development may benefit from two possible access routes, one via the internal road network of the Subject Site (refer to Figure 13-19 in Section 13.4.2) and a second one via the southern Local Road (refer to Figure 13-4 in Section 13.4.2).

Regarding the **Potential Future Developments 1 & 2**, trip generation and distribution from the Transport Assessment Report prepared by NRB Consulting Engineers attached to the Pl.

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Apl. Reg. Ref. No. 211669 has been consulted. The document was made for both residential developments. The TTA indicates that both developments will generate a total of 63 vehicular trips in the AM peak hour (18 arrivals and 45 departures) and a total of 64 vehicular trips in the PM peak hour (42 inbound and 22 outbound). Taffic flows distribution has been taken from Appendix C of the Transport Assessment Report prepared by NRB Consulting Engineers, and is shown in Figure 13-24 below

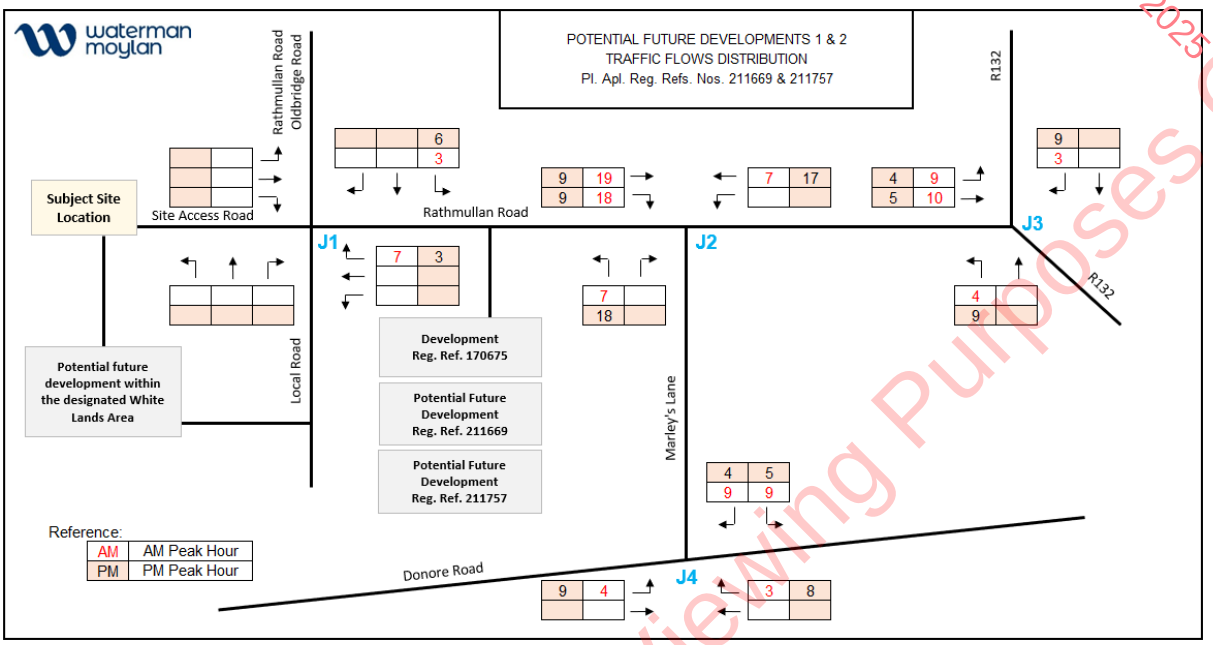



*Figure 13-24 Potential Future Developments - Traffic Flows – Pl. Apl. Reg. Refs. Nos. 211669 & 211757*

With regard to the **Potential Future Development 3**, it is estimated that the site could accommodate approximately 470 residential units. Based on the trip rates presented in Table 13-4 in Section 13.5.2 above, it is anticipated that this development would generate a total of 148 two-way trips during the AM peak hour (96 inbound and 52 outbound trips) and 241 two-way trips during the PM peak hour (151 inbound and 90 outbound trips).

It is further assumed that the trip distribution will follow the same pattern as that identified for the Subject Site (refer to Figure 13-21 in Section 13.5.2 above).

Furthermore, as previously noted, it is likely that the potential development would benefit from two possible access routes: one via the internal road network of the Subject Site, and another via the southern Local Road. For the purposes of this Transport Technical Assessment (TTA), it is assumed that 60% of all trips to and from the development would utilise the internal road network of the Subject Site, appearing on the western arm of Junction 1 (refer to Figure 13-5 in Section 13.3.1). The remaining 40% would access the site via the southern local road, appearing on the southern arm of Junction 1.

Moreover, given that this area is reserved for future development and the timing of its delivery remains uncertain, it has been assumed that the development would be completed and fully occupied between five and fifteen years after the opening year of the Subject Site. Accordingly, the traffic impact of this potential development is assumed to be reflected in the opening year + 15 scenario.

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Based on the above assumptions, the projected traffic flows associated with the Potential Future Development within the designated White Lands Area are illustrated in Figure 13-25 below.

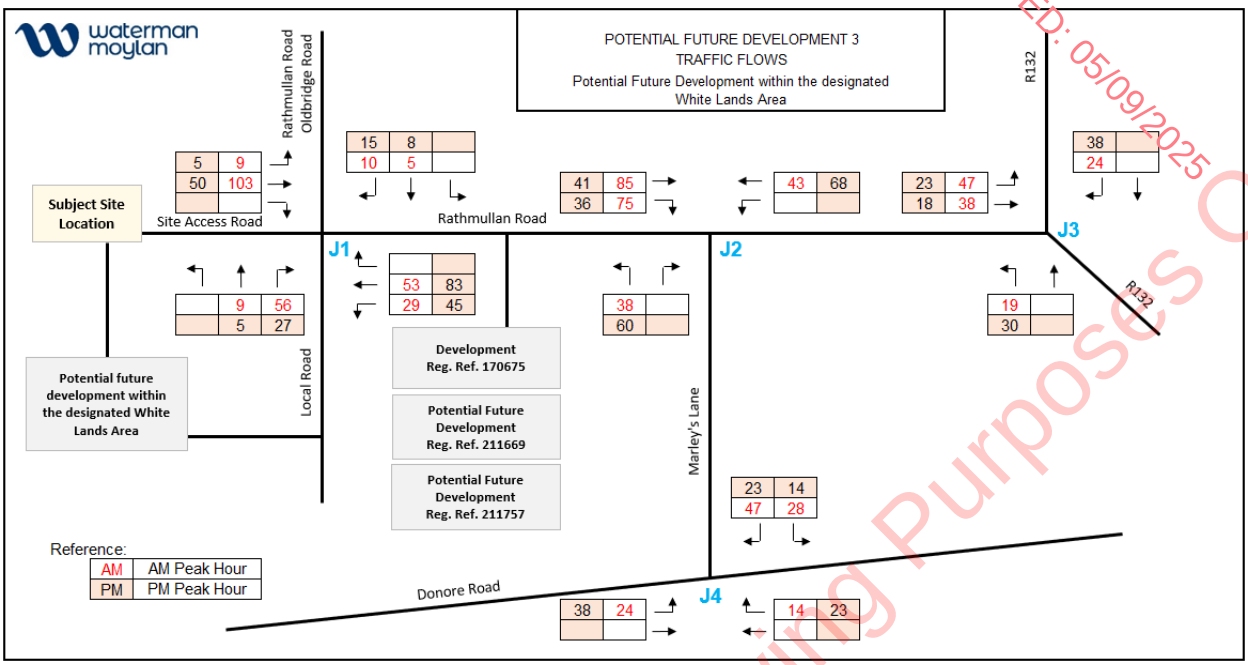



*Figure 13-25 Potential Future Developments - Traffic Flows – Potential Future Development within the designated White Lands Area*

### Traffic Growth Rates

It has been assumed within this Traffic and Transport Assessment that the proposed development will be constructed to allow 2028 be the assumed year of opening. As per methodology adopted in the 'Transport Assessment Guidelines (May 2014)', which the subject TTA is based on, the surveyed junctions were also assessed for the future design years of 2033 (Opening year + 5 years) and 2043 (opening year +15 years).

The traffic growth rate used to factor up the 2024 base year traffic movements (refer to Figure 13-6 of this report) is in accordance with "*Table 6.2: Link-Based Growth Rates: County Annual Growth Rates (excluding Metropolitan Area)"* within the *TII Publications – Project Appraisal Guidelines for National Roads, Unit 5.3 – Travel Demand Projections (October 2021)*.

Based on the Traffic Survey, the urban growth area has been identified as the central area, where Light Vehicles are the predominant vehicle type.

The factors considered in the current assessment are shown below:

- Base line: 2025
- Opening year: 2028 = 1.053 (growth factor from 2025 to 2028)
- Opening year + 5: 2033 = 1.113 (growth factor from 2025 to 2033)
- Opening year + 15: 2043 = 1.189 (growth factor from 2025 to 2043)

### Assessed Junctions

The junctions considered as part of this Traffic and Transport Assessment are the following:

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- **Junction 1:** Proposed Signalised Crossroad: Rathmullan Road (E) / Local Road (S) / Site Access Road (W) / Rathmullan Road (N).
- **Junction 2:** Existing signalised T-junction: Rathmullan Road (E) / Marley's Lane (S) / Rathmullan Road (W).
- **Junction 3:** Existing priority-controlled T-junction: R132 Dublin Road (E) / Rathmullan Road (W) / R132 Dublin Road (N).
- **Junction 4:** Existing signalised T-junction: Donore Road (E) / Donore Road (W) / Marley's Lane (N).




*Figure 13-26 Assessed Junctions (Source: Open Street Map)*

**Traffic impact of the Proposed Development**

Section 2.1 of the Traffic and Transport Assessment Guidelines (May 2014) requires submission of a Transport Assessment where a proposed development meets one or more of the following criteria:

1- Traffic to and from the development exceeds 10% of the traffic flow on the adjoining road.

2- Traffic to and from the development exceeds 5% of the traffic flow on the adjoining road where congestion exists, or the location is sensitive.

3- Residential development in excess of 200 dwellings.

4- Retail and leisure development in excess of 1,000sqm.

5- Office, education and hospital development in excess of 2,500sqm.

6- Industrial development in excess of 5,000sqm.

7- Distribution and warehousing in excess of 10,000sqm.

The TII document indicates that the impact of new developments is considered to be significant if the level of traffic generated by them exceeds the thresholds of 10% for normal operating networks and 5% for congested networks. When such levels of impact are generated, a more detailed assessment should be carried out to determine the specific impact on the operational performance of the network.

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A summary of the existing two-way traffic and the expected traffic increase at each studied junction is presented below. The results help to determine the effect of the Proposed Development on traffic surrounding.

*Table 13-6 Existing and Expected Two-way Flows*

| Junction | Junction Existing Flow - AM Peak Hour | Junction Existing Flow - PM Peak Hour | Additional Traffic Two-way Flow (AM) | Additional Traffic Two-way Flow (PM) | % Expected Increase (AM) | % Expected Increase (PM) |
|---|---|---|---|---|---|---|
| **Junction 1** | 159 | 88 | 147 | 125 | 92.5% | 142.0% |
| **Junction 2** | 1594 | 1025 | 158 | 108 | 9.9% | 10.5% |
| **Junction 3** | 2033 | 2029 | 68 | 57 | 3.3% | 2.8% |
| **Junction 4** | 1231 | 1282 | 61 | 51 | 4.9% | 4.0% |

As can be seen from the table above, junctions 1 and 2 exceed the 10% threshold mentioned above, thus need to be modelled. In contrast, Junctions 3 and 4 are below the 5% threshold and therefore no further assessment is required.

**Modelling Background**

There are various modelling software packages available to assess every type of junction. Waterman Moylan uses ARCADY, TRANSYT and PICADY to analyse roundabouts, signalised and priority junctions, respectively.

ARCADY is a software for modelling roundabouts. This programme utilises roundabouts geometry and traffic flows input by the user to determine Ratio of Flow to Capacity (RFC) and queue length for each link on the roundabout.

TRANSYT (Traffic Network Study Tool) software is a widely accepted software for modelling signalled controlled junctions. This programme utilises the phases input by the user and optimises their timings over a cycle time. The outputs of a TRANSYT assessment include a Degree of Saturation percentage (DOS%) figure and queue length for each link on the road network.

PICADY is a software for modelling priority-controlled junctions. This programme utilises junction's geometry and traffic flows input by the user to determine Ratio of Flow to Capacity (RFC) and queue length for each link on the junction.

The results of the model include the following:

- DOS% / RFC ratio represents the ratio of demand flow to capacity. The practical capacity threshold is typically set at 0.85. A value below 0.85 indicates that the junction is operating in an efficient and stable state. A value between 0.85 and 1 represents variable operation and can be considered to be operating adequately if queuing and delay are deemed to be within an acceptable range. However, a junction is typically considered to be operating satisfactorily when the DOS%/RFC of each link does not exceed 0.9. A value exceeding 1 indicates a congested condition.
- Max Queue Length: This represents the maximum queue length of vehicles waiting to enter the junction on each arm.

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- Average Delay: This shows the average amount of traffic delay at the junction per vehicle over the peak hour period.
- The number of vehicles depicted in the figure below is expressed in PCU, where PCU represents the acronym for "Passenger Car Unit." One PCU is equivalent to one passenger car or light goods vehicle (LGV), 1.5 PCUs to one medium heavy goods vehicle (Medium HGV), 2 PCUs to one bus, and 2 PCUs to one large heavy goods vehicle (Large HGV). One PCU is equivalent to 5.75 meters

**Assessed Scenarios**

The performance of the junctions has been analysed for the critical AM Peak Hour and PM Peak Hour (08:00 – 09:00 and 17:00 – 18:00) for the following scenarios:

- **2028 DO NOTHING** –Opening year, without development– (DN-2028): with 2025 base year factored up (refer to Section 13.5.2 “Traffic Growth Rates”) + traffic to/from the committed developments 1 & 2 (refer to Section 13.5.2 “Committed and Potential Future Developments”). Traffic flows are shown in Figure 13-27 below.
- **2033 DO NOTHING** –Opening year + 5 years, without development– (DN-2033): with 2025 base year factored up (refer to Section 13.5.2 “Traffic Growth Rates”) + traffic to/from the committed developments 1 & 2 (refer to Section 13.5.2 “Committed and Potential Future Developments”). Traffic flows are shown in Figure 13-28 below.
- **2043 DO NOTHING** –Opening year + 15 years, without development– (DN-2043): with 2025 base year factored up (refer to Section 13.5.2 “Traffic Growth Rates”) + traffic to/from the committed developments 1, 2 & 3 (refer to Section 13.5.2 “Committed and Potential Future Developments”). Traffic flows are shown in Figure 13-29 below.
- **2028 DO SOMETHING** –Opening year, with development– (DS-2028): (DN-2028) + Traffic to/from the Subject Development (refer to Section 13.5.2 “Committed and Potential Future Developments”). Traffic flows are shown in Figure 13-30 below.
- **2033 DO SOMETHING** –Opening year + 5 years, with development– (DS-2033): (DN-2033) + Traffic to/from the Subject Development (refer to Section 13.5.2 “Committed and Potential Future Developments”). Traffic flows are shown in Figure 13-31 below.
- **2043 DO SOMETHING** –Opening year + 15 years, with development– (DS-2043): (DN-2043) + Traffic to/from the Subject Development (refer to Section 13.5.2 “Committed and Potential Future Developments”). Traffic flows are shown in Figure 13-32 below.

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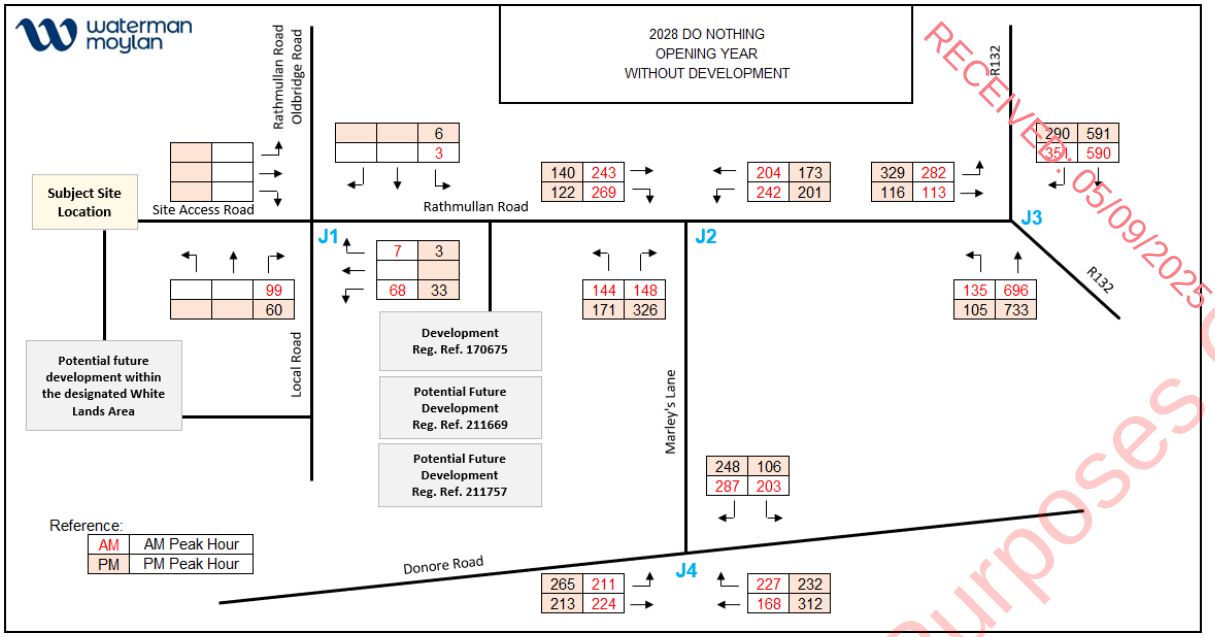



*Figure 13-27 Traffic Flows - 2028 DO NOTHING - Opening year, Without Development*

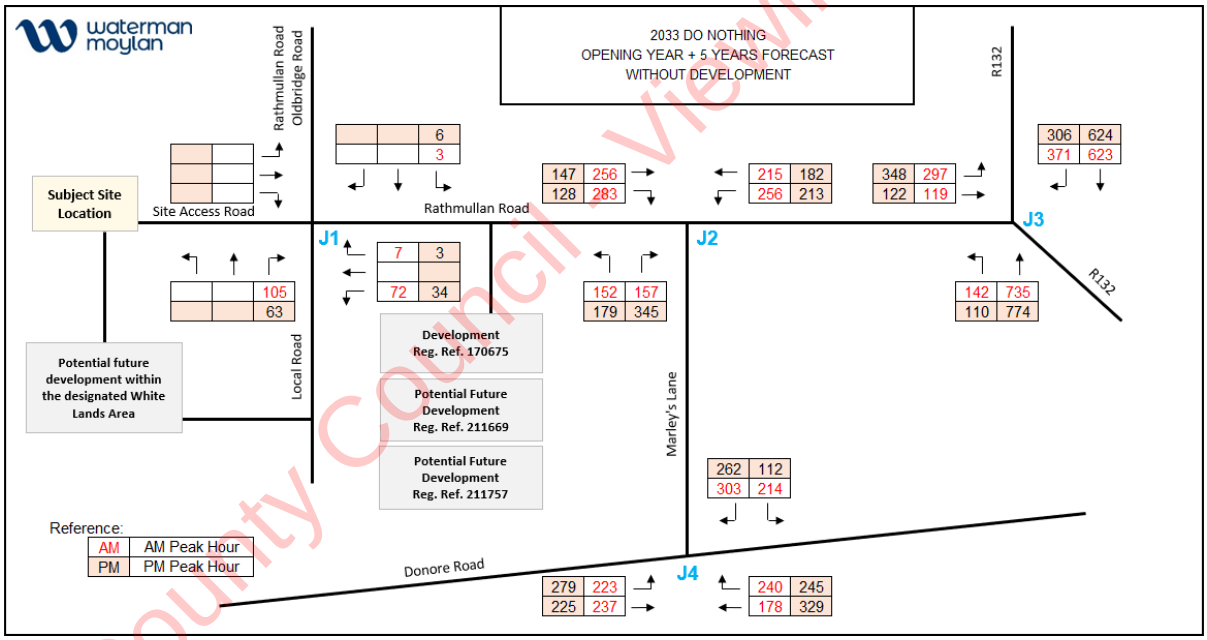



*Figure 13-28 Traffic Flows - 2033 DO NOTHING - Opening year + 5 years, Without Development*

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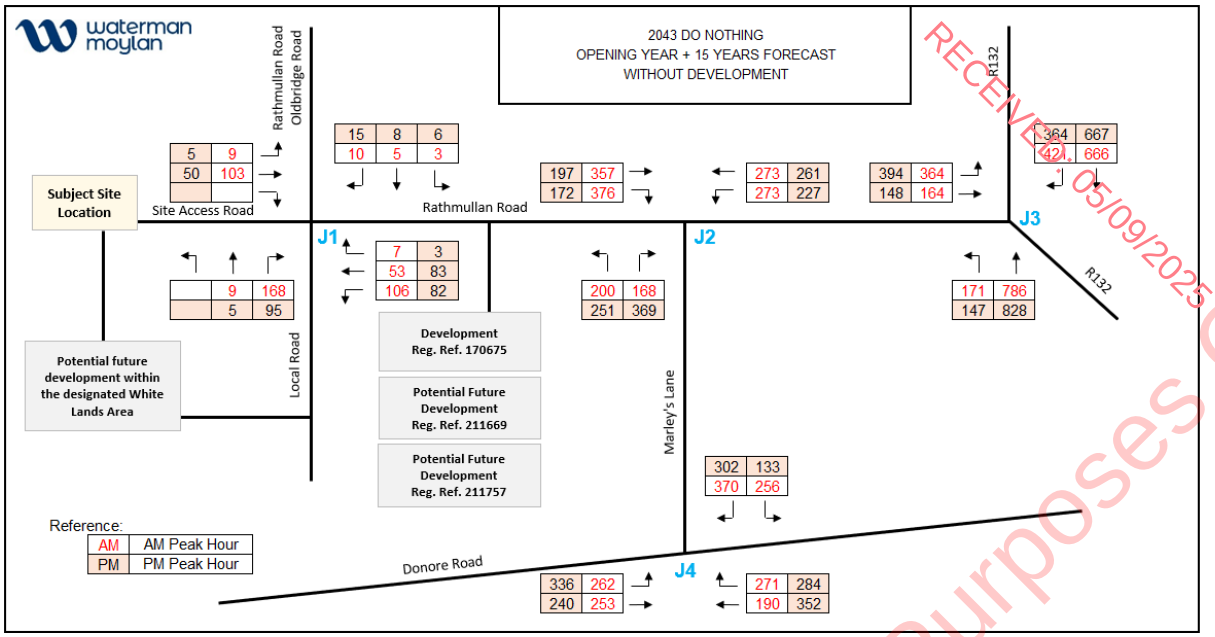



*Figure 13-29 Traffic Flows - 2043 DO NOTHING - Opening year + 15 years, Without Development*

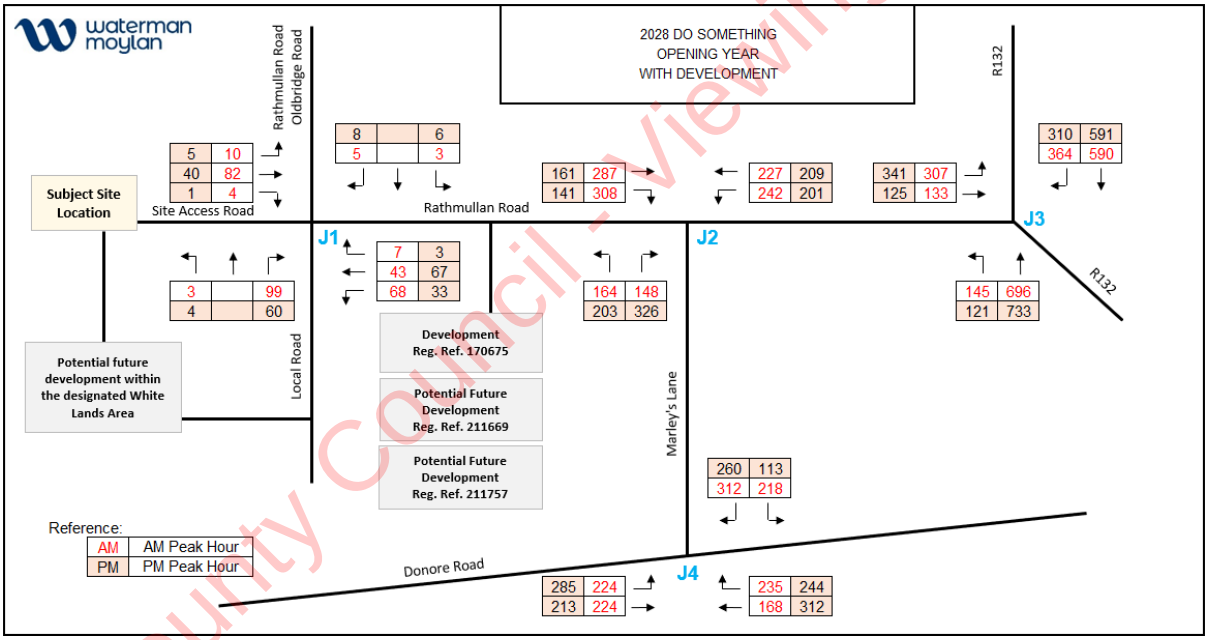



*Figure 13-30 Traffic Flows - 2028 DO SOMETHING - Opening year, With Development*

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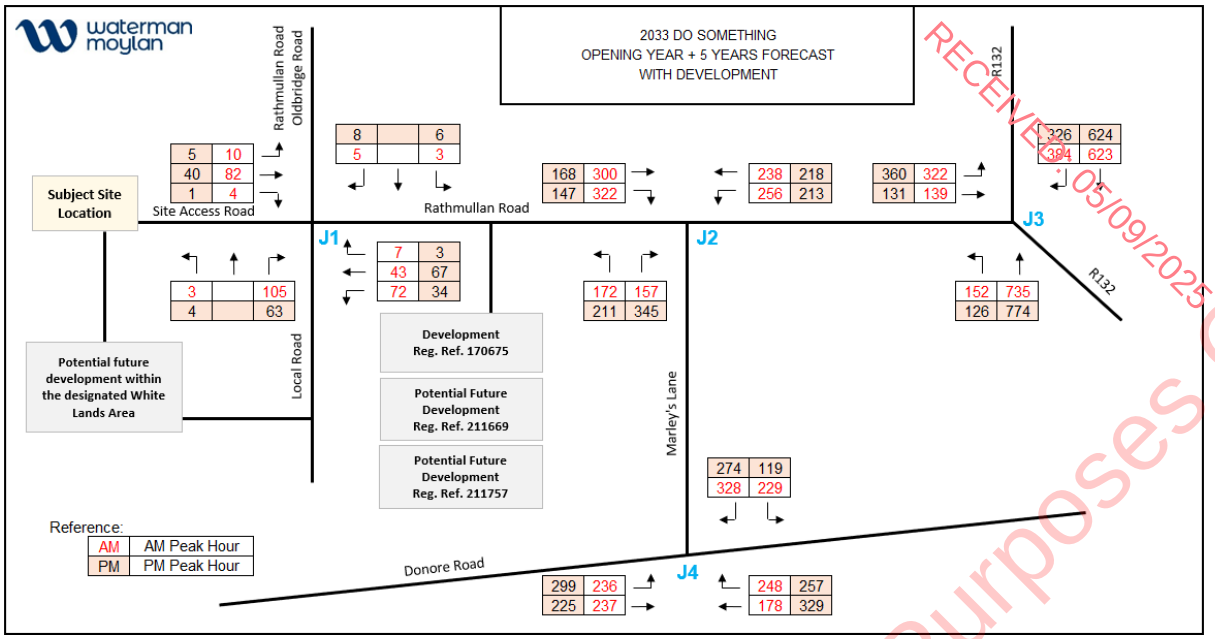



*Figure 13-31 Traffic Flows - 2033 DO SOMETHING - Opening year + 5 years, With Development*

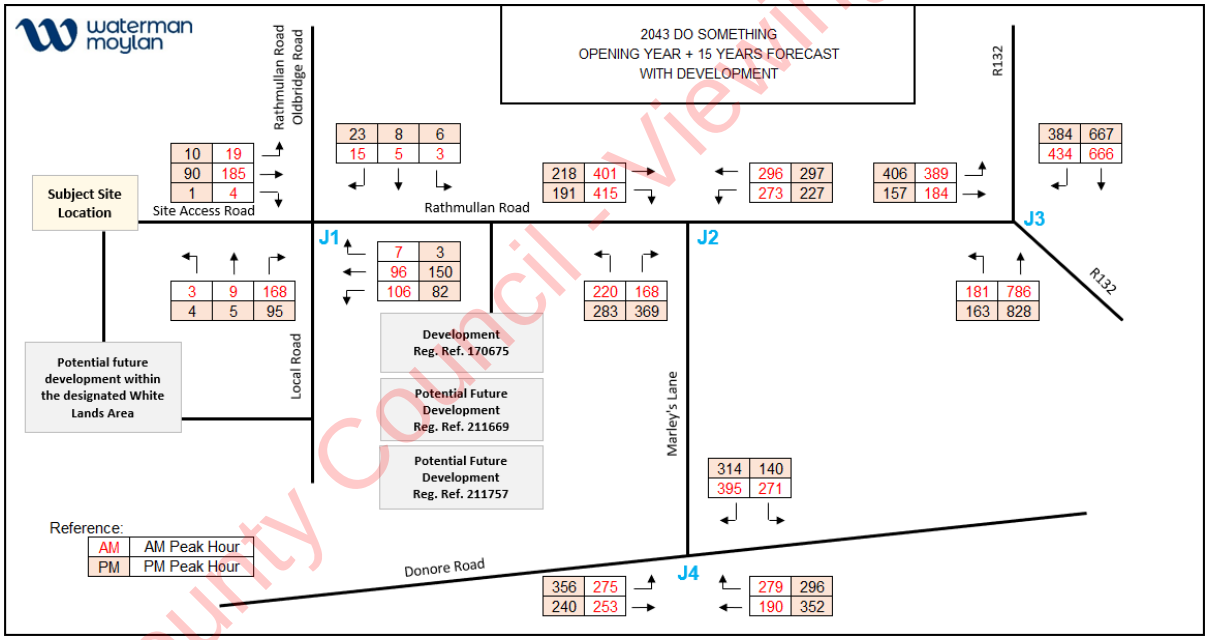



*Figure 13-32 Traffic Flows - 2043 DO SOMETHING - Opening year + 15 years, With Development*

## Junction Modelling

Junction 1: Rathmullan Road, Local Road & Site Access Road

Junction 1 is an existing Priority-Controlled T-Junction situated at the intersection of Rathmullan Road and Local Road (see Figure 13-26 above).

For the opening year of the subject site, this junction will be upgraded to a signalised crossroad including the site access road as can be seen in Figure 13-15 in Section 13.3.2.

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The arms of the junction were labelled as follows within Transyt 16 model:

- Arm A: Rathmullan Road (E)
- Arm B: Local Road (S)
- Arm C: Site Access Road (W)
- Arm D: Rathmullan Road (N)

The junction was modelled with a cycle time of 90 seconds, a pedestrian flow of 100 people per hour and the following sequence of movements.

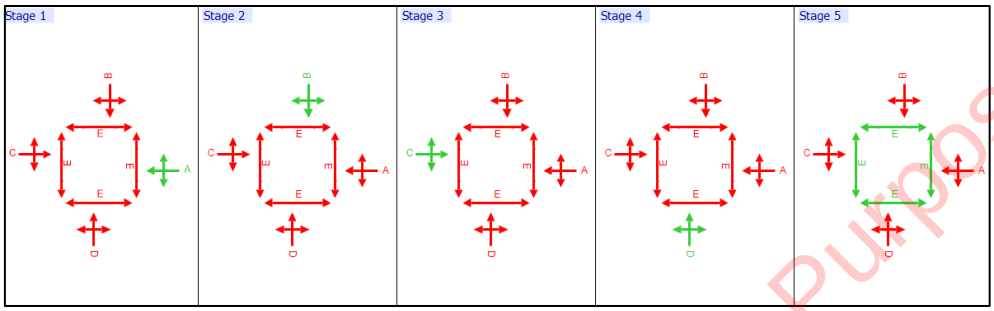



*Figure 13-33 Junction 1 – Stage Sequence*

The results of the Transyt 16 analysis are presented in Table 13-7 below.

*Table 13-7 Junction 1 – Assessment Result*

| Arm (Mov.) | AM Peak Hour | | | PM Peak Hour | | |
|---|---|---|---|---|---|---|
| | DOS | Delay (s) | Queue (PCU) | DOS | Delay (s) | Queue (PCU) |
| 2028 DO NOTHING (DN-2028) | | | | | | |
| A (S/L/R) | 12 | 19.91 | 1.26 | 6 | 19.28 | 0.59 |
| B (S/L/R) | 31 | 34.72 | 2.21 | 18 | 31.8 | 1.27 |
| C (S/L/R) | 0 | 0 | 0 | 0 | 0 | 0 |
| D (S/L/R) | 2 | 38.03 | 0 | 4 | 38.25 | 0.14 |
| 2028 DO SOMETHING (DS-2028) | | | | | | |
| A (S/L/R) | 18 | 20.64 | 2.05 | 16 | 20.39 | 1.76 |
| B (S/L/R) | 32 | 34.89 | 2.28 | 19 | 31.95 | 1.36 |
| C (S/L/R) | 27 | 32.24 | 2.08 | 14 | 31.23 | 0.96 |
| D (S/L/R) | 5 | 38.4 | 0.18 | 9 | 38.89 | 0.32 |
| 2033 DO NOTHING (DN-2033) | | | | | | |
| A (S/L/R) | 12 | 19.97 | 1.33 | 6 | 19.3 | 0.61 |
| B (S/L/R) | 33 | 35.07 | 2.35 | 19 | 31.92 | 1.33 |
| C (S/L/R) | 0 | 0 | 0 | 0 | 0 | 0 |
| D (S/L/R) | 2 | 38.03 | 0 | 4 | 38.25 | 0.14 |
| 2033 DO SOMETHING (DS-2033) | | | | | | |
| A (S/L/R) | 19 | 20.72 | 2.12 | 16 | 20.4 | 1.78 |
| B (S/L/R) | 34 | 35.24 | 2.43 | 20 | 32.07 | 1.42 |
| C (S/L/R) | 27 | 32.24 | 2.08 | 14 | 31.23 | 0.96 |
| D (S/L/R) | 5 | 38.4 | 0.18 | 9 | 38.89 | 0.32 |
| 2043 DO NOTHING (DN-2043) | | | | | | |
| A (S/L/R) | 26 | 21.58 | 2.95 | 26 | 21.61 | 2.99 |
| B (S/L/R) | 55 | 40.62 | 4.37 | 29 | 33.57 | 2.2 |
| C (S/L/R) | 31 | 32.98 | 2.43 | 16 | 31.6 | 1.16 |
| D (S/L/R) | 11 | 39.23 | 0.42 | 18 | 40.53 | 0.69 |
| 2043 DO SOMETHING (DS-2043) | | | | | | |
| A (S/L/R) | 33 | 22.52 | 3.85 | 37 | 23.13 | 4.41 |
| B (S/L/R) | 56 | 40.95 | 4.46 | 31 | 33.77 | 2.29 |
| C (S/L/R) | 58 | 39.33 | 5.07 | 30 | 33.62 | 2.22 |
| D (S/L/R) | 14 | 39.75 | 0.54 | 23 | 41.56 | 0.89 |

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The results indicate that the junction would operate within its capacity for the 2043 DO SOMETHING scenario during both peak periods.

During the AM peak hour, the highest DOS is 58%, with a corresponding queue of 5.07 vehicles. This is achieved on the Site Access Road (W). During the PM peak hour, the highest DOS is 37% with a corresponding queue of 4.41 vehicles. This is reached Rathmullan Road (E).

Junction 2 Rathmullan Road, Marley's Lane & Rathmullan Road

Junction 2 is an existing signalised T-junction situated at the intersection of Rathmullan Road, Marley's Lane & Rathmullan Road (see Figure 13-26 above).

The arms of the junction were labelled as follows within Transyt 16 model are:

- Arm A: Rathmullan Road (W)
- Arm B: Marley's Lane (S)
- Arm C: Rathmullan Road (E)

The junction was modelled with a cycle time of 90 seconds, a pedestrian flow of 100 people per hour and the following sequence of movements.

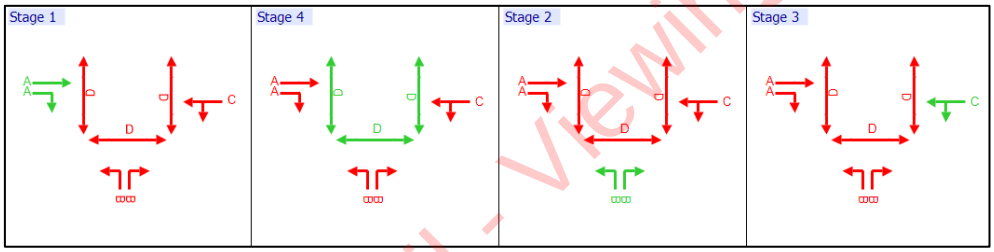



*Figure 13-34 Junction 2 – Stage Sequence*

The results of the Transyt 16 analysis are presented in Table 13-8 below.

*Table 13-8 Junction 2 – Assessment Result*

| Arm (Mov.) | AM Peak Hour | | | PM Peak Hour | | |
|---|---|---|---|---|---|---|
| | DOS | Delay (s) | Queue (PCU) | DOS | Delay (s) | Queue (PCU) |
| 2028 DO NOTHING (DN-2028) | | | | | | |
| A (S/L/R) | 66 | 28.16 | 9.79 | 57 | 26.33 | 7.74 |
| B (L) | 48 | 39.47 | 3.46 | 33 | 26.85 | 3.41 |
| B (R) | 49 | 39.85 | 3.57 | 63 | 33.54 | 7.58 + |
| C (S) | 43 | 27.15 | 4.96 + | 39 | 34.4 | 3.16 |
| C (L) | 48 | 28.07 | 5.60 + | 34 | 33.46 | 2.7 |
| 2028 DO SOMETHING (DS-2028) | | | | | | |
| A (S/L/R) | 69 | 29.37 | 10.53 | 62 | 27.81 | 8.82 |
| B (L) | 55 | 41.54 | 4.06 | 39 | 27.86 | 4.18 |
| B (R) | 49 | 39.85 | 3.57 | 63 | 33.54 | 7.58 + |
| C (S) | 51 | 28.77 | 6.09 + | 45 | 35.65 | 3.71 + |
| C (L) | 55 | 29.67 | 6.66 + | 39 | 34.46 | 3.18 |
| 2033 DO NOTHING (DN-2033) | | | | | | |
| A (S/L/R) | 69 | 29.48 | 10.58 | 60 | 27.16 | 8.45 |
| B (L) | 51 | 40.24 | 3.68 | 34 | 27.08 | 3.62 |
| B (R) | 52 | 40.76 | 3.86 | 66 | 34.88 | 8.22 + |
| C (S) | 46 | 27.6 | 5.31 + | 41 | 34.81 | 3.33 |
| C (L) | 51 | 28.61 | 6.00 + | 36 | 33.77 | 2.84 |
| 2033 DO SOMETHING (DS-2033) | | | | | | |

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| Arm (Mov.) | AM Peak Hour | | | PM Peak Hour | | |
|---|---|---|---|---|---|---|
| | DOS | Delay (s) | Queue (PCU) | DOS | Delay (s) | Queue (PCU) |
| A (S/L/R) | 73 | 30.92 | 11.51 | 65 | 28.81 | 9.47 |
| B (L) | 57 | 42.5 | 4.3 | 41 | 28.14 | 4.36 |
| B (R) | 52 | 40.76 | 3.86 | 66 | 34.88 | 8.22 + |
| C (S) | 54 | 29.32 | 6.47 + | 47 | 36.12 | 3.89 + |
| C (L) | 58 | 30.33 | 7.09 + | 41 | 34.81 | 3.33 |
| 2043 DO NOTHING (DN-2043) | | | | | | |
| A (S/L/R) | 80 | 35.43 | 13.71 | 74 | 32.35 | 11.6 |
| B (L) | 67 | 46.86 | 5.32 | 48 | 29.66 | 5.38 |
| B (R) | 56 | 42.01 | 4.18 | 71 | 36.92 | 9.05 + |
| C (S) | 64 | 32.23 | 8.19 + | 55 | 38.32 | 4.70 + |
| C (L) | 67 | 33.47 | 8.82 + | 48 | 36.4 | 3.99 + |
| 2043 DO SOMETHING (DS-2043) | | | | | | |
| A (S/L/R) | 78 | 34.8 | 12.68 | 74 | 33.81 | 10.88 |
| B (L) | 67 | 50.31 | 4.8 | 41 | 27.51 | 4.54 |
| B (R) | 64 | 48.43 | 4.46 | 68 | 34.58 | 8.73 + |
| C (S) | 56 | 29.94 | 6.90 + | 56 | 40.84 | 4.43 + |
| C (L) | 60 | 31.09 | 7.56 + | 48 | 38.53 | 3.67 + |

The results indicate that the junction would operate within its capacity for the 2043 DO SOMETHING scenario during both peak periods.

During the AM peak hour, the highest DOS is 84%, with a corresponding queue of 14.84 vehicles. This is achieved on the eastbound Rathmullan Road (W). During the PM peak hour, the highest DOS is 79% with a corresponding queue of 13.12 vehicles. This is reached also on eastbound Rathmullan Road (W).

Summary of the Junction Assessment

The results of the assessment of the junctions demonstrate that each of the junctions would operate within their respective capacities for all assessment years and scenarios assessed. In summary, the following conclusion can be drawn:

- Junction 1 is proposed signalised crossroad situated at the intersection of Rathmullan Road, Local Road & Site Access Road. The results indicate that the junction would operate within its capacity for the 2043 DO SOMETHING scenario during both peak periods.
- Junction 2 is an existing signalised T-junction situated at the intersection of Rathmullan Road, Marley's Lane & Rathmullan Road. The results indicate that the junction would operate within its capacity for the 2043 DO SOMETHING scenario during both peak periods.
- Junctions 3 and 4 are below the 5% threshold, as indicated in Table 13-6 above, and therefore no further assessment has been carried out.

### 13.5.3 Potential Cumulative Effects

**Future Traffic effect**

The growth factors applied to the 2025 Surveyed Traffic Flows are taken from TII and make an allowance for traffic growth due to future developments in the area. This is in line with industry standards and best practice. The traffic modelling undertaken includes the growth factors and therefore the potential cumulative effects have been considered as part of this proposal.

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**Future Development**

Any future development will increase the traffic volumes on the surrounding road and therefore a full Traffic and Transport assessment will be prepared and appropriate mitigation measures implemented for any future developments.

### 13.5.4 "Do Nothing" Effect

Should the Proposed Development not take place, the access roads and infrastructure will remain in their current state and there will be no change. Background traffic would be expected to grow over time. Given the location and zoning of the Proposed Development, it is reasonable to assume that a similar development, with a potentially more intensive requirement for vehicular trips, would be established on this site at some stage in the future.

## 13.6 Avoidance, Remedial & Mitigation Measures

### 13.6.1 Construction Phase

- The main contractor as part of their site set up arrangements, shall appoint a Coordinator responsible for the implementation of a Construction Stage Mobility Management Plan and shall carry out the following tasks as part of its role:
    - Encourage staff to avoid using of their cars and use alternative modes of transport in order to reduce the number of cars on the road and the need of car parking spaces.
    - Provide an extensive information service for public transport options and routes at a public location(s) within the development for construction workers.
    - Update the public transport information adjacent to the development on an ongoing basis.
    - Advise company staff of tax incentives for public transport and bicycles.
- A limited number of car parking spaces may be provided for senior construction managers within the development site. Suitable locations in the surrounding area may be identified where staff can park and link to public transportation.
- For those wishing to cycle to and from the site, dedicated cycle parking will be provided for the duration of the works within the site. Shower facilities and lockers will also be provided.
- A detailed Construction and Traffic Management Plan will be prepared by the contractor and agreed with the Local Authority before commencing works on site, which must describe the following:
    - Dedicated construction haul routes, which will be identified and agreed upon with the local authority before the commencement of construction activities on site.
    - A dedicated "construction site"' access/egress system to be implemented during the construction phases.
    - Manage the entry and exit of heavy vehicles to and from the site. The assignment of staff to assist pedestrians and traffic flow when heavy vehicle movements occur on the roads.
    - Define schedules for the entry and exit of materials and machinery to limit the generation of noise on the network to specific time slots.

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- Adequate signposting will be located on-site to ensure the safety of all road users and construction workers.
- All heavy vehicles transporting solid materials must ensure that the load is properly covered to prevent dust dispersion onto the road.
- All vehicles should wash their wheels, when necessary, when leaving the site to prevent dust being thrown onto the road.
- Hoarding will be set up around the perimeter to prevent pedestrian access.
- A material storage zone will also be provided in the Construction Compound area. This storage zone will include material recycling areas and facilities.
- The contractor will be obliged to ensure that any sub-contractors engaged on the site are made fully aware of the required mitigation measures and that they are properly implemented as part of any works that they undertake.

The coordinator responsible for the implementation of a Construction Mobility Management Plan will carry out the following (which is a non-exhaustive list):

- Encourage staff to avoid using of their cars and use alternative modes of transport in order to reduce the number of cars on the road and the need of car parking spaces.
- Provide an extensive information service for public transport options and routes at a public location(s) within the development for construction workers.
- Update the public transport information adjacent to the development on an ongoing basis.
- Advise company staff of tax incentives for public transport and bicycles. For those wishing to cycle to and from the site, dedicated cycle parking will be provided for the duration of the works within the site. Shower facilities and lockers will also be provided.

The following must be noted and implemented during the construction stage:

Measures to Minimise Nuisance

The measures, which are proposed to be operational at this site will include:

- Use of a properly designed access and egress to minimise the effects on both external traffic and local amenity.
- Check on each arriving and departing vehicle at the site entrance from the public street.
- Use of banksman, where necessary, to control exit of construction vehicles onto public road.
- Issue of instructions and maps clearly setting out the construction traffic route to the site to each sub-Contractor to ensure that all contractors are clearly briefed on the route to/from the site.
- Ongoing assessment of the route for construction traffic to and from the site and prompt action when issues are identified.
- Working hours of 08h00-19h00 Monday – Friday and 09h00-13h00 Saturday or as otherwise may be agreed with Meath County Council.

Site Control Measures

The designated and operational on-site control measures, which will be established and maintained at this site, will include:

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- Designated hard routes and appropriate signage will be provided throughout the site to ensure the safety of all road users and construction workers.
- Each departing vehicle to be checked by banksman.
- All heavy vehicles spilling solid material on the road must cover the material to prevent dust being thrown onto the road.
- All vehicles should wash their wheels, as necessary, at egress point.
- Hoarding will be set up around the perimeter to prevent pedestrian access.
- A material storage zone will also be provided in the Construction Compound area. This storage zone will include material recycling areas and facilities.
- Facility to clean local roads if mud or spillage occurs.
- The contractor will be obliged to ensure that any sub-contractors engaged on the site are made fully aware of the required mitigation measures and that they are properly implemented as part of any works that they undertake.

Control of Noise

Site deliveries will be confined to working hours and an allocated offloading location will be utilized for all deliveries. Measures for the control and monitoring of noise and vibration during construction, including measures to mitigate noise are indicated below:

- Ensure all vehicle movements (on site) occur within normal working hours. (Other than where extension of work requiring such movements has been granted in cases of required road closures or for health and safety reasons).
- Plan deliveries and vehicle movements so that vehicles are not waiting or queuing on the public highway, if unavoidable engines should be turned off.
- Plan the site layout to ensure that reversing is kept to a minimum.
- Where reversing is required use broadband reverse sirens or where it is safe to do so disengage all sirens and use banksmen.
- Rubber/neoprene or similar non-metal lining material matting to line the inside of material transportation vehicles to avoid first drop high noise levels.
- Wheel washing of vehicles prior to exiting the site shall take place to ensure that adjoining roads are kept clean of dirt and debris. Regular washing of adjoining streets should also take place as required by road sweepers.

### 13.6.2 Operational Phase

A Mobility Management Plan will be implemented and developed on an ongoing basis with the triple objectives of promoting sustainability, enhancing public transport, and reducing dependency on the use of the private car.

This Mobility Management Plan focuses primarily on intangible measures such as promotion, marketing and events. A significant proportion of the measures included in this section are low cost but highly visible and contribute to creating a culture of sustainability within the organisation.

Consequently, the proposed Mobility Management Plan comprises a series of measures designed to encourage more sustainable travel habits among residents and visitors. In

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addition, the plan is designed to address the typical day-to-day operational requirements at the site. The implementation and management of the plan will be overseen by a Coordinator.

The developer will appoint a Mobility Management Plan coordinator or management company to oversee the development of the plan. The latter will appoint a senior member of staff as Mobility Management Plan Coordinator.

The Mobility Management Plan Coordinator will represent the philosophy of the plan and act as a coordinator for the proper functioning of the plan. The coordinator shall be appointed within two months of the site being occupied. The Mobility Management Plan Coordinator's responsibilities shall include:

- Implementing and maintaining the plan.
- Monitoring the progress of the plan.
- Liaising with internal stakeholders, and external public transport operators, planning and government authorities.
- Producing information reports for the developer, employees, visitors, clients and government authorities.
- Ongoing evaluation of the Plan's objectives.

The Mobility Management Plan Coordinator will be responsible for the creation and maintenance of up-to-date travel information boards for residents/students and/or Mobility Plan’s mobile app and/or a website. The travel information boards will be installed in strategic locations, where residents will have access to a variety of resources, including travel information, timetables, internet access, and notice boards.

In addition to the above responsibilities, the Mobility Management Plan Coordinator must also undertake the following activities:

- Local Policies Review with the aim of understanding their impact on the daily resident travel patterns
- Site Audit considering the following guidance:
    - Public Transport service: considering the location of the bus stops and the train stations, the route which is served and the frequency of services passing through the bus stop or train station.
    - Pedestrian and cycle accessibility: this should include an assessment of the local cycling and walking environment from the Proposed Development to the various public transport stops. This assessment must consider the current conditions and , where necessary, identify areas for improvement.
    - Road condition: considering the traffic condition and if there is congestion near the site.
    - Car parking spaces near to the site: A survey of the car parking facilities in the vicinity of the site will provide an indication of the potential parking areas, if employees and visitors do not have sufficient space within the site's car park. The survey must consider the volume and usage of the parking spaces, their location, quality and quantity, and the relationship between these factors and the demand for parking spaces. It must also consider any management issues that may arise.

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    - Facilities' location: it is important for employees and visitors to be aware of the location of the primary shops, as well as the relative distance to the site. The distance should be provided in metres and in travel time, either walking or cycling.
- Residents Travel Survey: This can be achieved by means of self-completion questionnaires, which will help to identify travel requirements and set targets and needs. The information requested in the questionnaire should include:
    - Basic Personal information (age, household size, car ownership, occupation).
    - Primary mode of transport.
    - Current travel patterns including the time taken to/from the Proposed Development to/from their destination.
    - It is also necessary to find out the views of workers and visitors on alternative modes of transport to the car, in order to identify the factors that would encourage them to switch to other modes. Furthermore, it is important to encourage the use of car-sharing schemes.
- Promoting the Mobility Management Plan: the Mobility Management Coordinator to provide all new residents with a Mobility Pack (or Travel Pack). The mobility pack should include:
    - The Mobility Management Plan.
    - Public transport information, including bus and rail routes and frequencies.
    - The benefits of the Mobility Management Plan for residents and visitors.
    - Details of tax incentives available, such as the Bike to Work Scheme, the Tax Saver Scheme for public transport tickets, etc.
    - A travel survey form.
    - Details of pedestrian and cycle facilities.

**Action Plan**

<u>Walking</u>

It is well documented that there are numerous benefits to walking to and from a destination on a daily basis. The Proposed Development is situated within an area characterised by a wider range of land uses that are accessible by walking. The surrounding area is characterised by a variety of land uses, a food discount store, a primary school, and a secondary school.

It is proposed that residents be encouraged to reduce the use of the car for short journeys and indeed choose to walk to the nearest bus stops, grocery store, and to commute to their place of work, school, or college. For that, the connection of footpaths within the Proposed Development with those existing will allow people to establish connections beyond the development itself.

The Mobility Management Coordinator will provide maps of the local area, which will show walking routes, local facilities, and distances with health information. This information will be displayed on the information board and/or the Mobility Plan mobile app and/or via a specific website; in order to assist residents and visitors understand the importance of choosing this mode of transportation over the automobile.

This communication tool will be developed to encourage residents to meet and walk together, fostering a sense of community between them. Furthermore, children enrolled in local schools will be encouraged to walk to school on a daily basis, thus reducing the number of private vehicles on the road.

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Cycling and cycle parking

Cycling is an effective mode of transport, promoting independence and sustainable travel and allowing for shorter distances to various facilities.

The Proposed Development is located in close proximity to a variety of amenities and employment areas, grocery stores, health care centres and shopping centres.

To facilitate the storage and maintenance of bicycles within the development, cycle parking has been provided in accordance with local guidelines and standards, as indicated in Section 13.4.2 above. House units are provided with access to their rear garden, offering the opportunity for secure bicycle storage. Therefore, it is not considered necessary to provide additional external bicycle storage facilities.

The Mobility Management Coordinator will provide maps of the local area, indicating cycle routes, local facilities, and distances with health information. This information will be displayed on the information board and/or the Mobility Plan mobile app and/or via a specific website; in order to assist residents and visitors understand the importance of choosing this mode of transportation over the automobile.

Furthermore, the Mobility Management Coordinator will inform residents of future development of cycle infrastructure.

If there is a genuine interest in bicycle maintenance, public courses on the use, maintenance, repair, and improvement of bicycles may be proposed.

Additionally, residents are encouraged to avail themselves of the government's Cycle to Work scheme, which may be available through their employers. Moreover, a fleet of hire bikes may be provided, which can be used to attend meetings or to test cycling to and from work before making a purchase.

Private and shared cars

Every day, thousands of commuters drive to work on the same routes to the same destinations at the same time as their colleagues. If every driver carried another driver, there would be 50% fewer cars on the road at peak times. There are numerous advantages to utilising sharing services for commuting purposes, including a reduction in carbon emissions, fuel costs and parking fees, as well as a reduction in congestion and journey times due to a reduction in the number of vehicles on the road. Additionally, the experience of the journey is enhanced due to a reduction in congestion and the presence of company.

Car sharing is a particularly attractive travel option for those living in areas with long distances or poor public transport connections. The Mobility Management Coordinator will encourage communication between different drivers by promoting the use of the information board and/or the Mobility Plan mobile app and/or a dedicated website, to facilitate the establishment of these car-sharing schemes. Furthermore, if the number of drivers is important, it may be beneficial to designate specific parking spaces in prime locations for carsharers only.

Strategy for public transport use

- Promote Tax Saver Commuter tickets

The TaxSaver Commuter Ticket Scheme is a cost-reduction initiative for public transport. It offers employers the opportunity to make PRSI savings of up to 10.75%. Residents can also

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benefit from savings on their travel costs, with savings of between 28.5% and 52% possible due to tax, PRSI and USC savings. The ticket covers bus, rail, and the Luas system.

The scheme is open to residents who wish to participate. They can discuss the matter with their employer, who will then apply for and purchase the ticket on their behalf.

The TaxSaver scheme is managed in conjunction with the Revenue Commissioners by the following transport providers:

- Dublin Bus
- Bus Éireann
- Luas
- Irish Rail
- Approved transport providers

Residents may obtain tickets as part of their salary package (salary sacrifice) in lieu of an annual cash bonus or as a benefit-in-kind. TaxSaver tickets are not subject to tax, PRSI or USC. It is important to note that residents are only liable to pay tax, PRSI, and USC on the portion of their salary that represents the actual remuneration. In addition, the employer is also responsible for calculating PRSI on the same basis.

The Mobility Management Plan Coordinator will be responsible for disseminating this information to the residents of the Proposed Development, thereby affording them the opportunity to request this benefit at their place of employment.

- Update travel information

The Mobility Management Plan Coordinator will provide maps of the local area, indicating the nearest bus stop and train stations and the distance between the Proposed Development and these points. Additionally, the Mobility Management Plan Coordinator will provide updated local train and bus maps and timetables.

This information will be displayed on the information board and/or the Mobility Plan mobile app and/or via a specific website; in order to assist residents and visitors understand the importance of choosing this mode of transportation over the automobile.

Furthermore, the Mobility Management Plan Coordinator will inform residents of future plans for the development of public transport routes in the area.

Residents of the area will be informed about online public transportation information systems, their use and the advantages that this entails.

- Monitoring of the Public Transport service

It is the responsibility of the Mobility Management Plan Coordinator to conduct regular assessments of the public transport service in order to ascertain the quality of the service provided. In order to ensure the provision of high-quality public transport services, the coordinator must consider a number of factors, including fare, travel time, vehicle conditions, and frequency.

The Mobility Management Plan Coordinator may also engage in lobbying activities with the public transport operators in order to ensure the continued provision of a high level of service on the public transport routes serving the development.

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### 13.6.3 "Worst Case" Scenario

The application of traffic growth rates assumes a worst case for the future year scenarios. The worst-case scenario for this development is assumed to be 2043 + Proposed Development.

## 13.7 Residual Effects

### 13.7.1 Construction Stage

In line with their experience working on projects of this scale in similar locations and in consideration of the reduced number of car parking spaces that should be available as outlined in the Mitigation Measures, the developer will construct a limited car park at the start of works by laying a temporary surface for vehicles.

Nevertheless, it is probable that there will be an increase in surrounding traffic particularly during the PM peak hour. It is likely that staff will arrive on site before 8am (before the morning peak of 8-9am) and it is likely that they will leave during the evening peak of 5-6pm. However, the mentioned increased traffic will be occurring during a short term.

Care will be taken to ensure existing pedestrian and cycling routes are suitably maintained or appropriately diverted as necessary during the construction period, which will be addressed by the Contractor as part of the Construction Traffic Management Plan, and which will be approved by Meath County Council. On this basis construction will likely have a negligible impact on pedestrian and cyclists. Due to the proposed mitigation measures outlined above, the effect of the Proposed Development will be temporary and minimised during the construction phase.

### 13.7.2 Operational Stage

There will be an increase in the use of the road network by private vehicles. However, a Mobility Management Plan will promote more sustainable forms of transport to help reduce the use of private vehicles by the residents of the proposed development.

There is likely to be an increase in the number of pedestrians and cyclists arising from the development. Footpaths and cycling paths, both internally and externally (along the site frontage) are provided as part of the development, thus, the effect should be minimal.

The traffic modelling undertaken includes growth in background traffic flows which accounts for other developments in the area.

The increase in traffic volumes as a result of the Proposed Development will affect the adjacent existing developments as the traffic flowing through access and egress from the site will increase. The transport assessment carried out indicates that all assessed junctions, operating with improved layouts as proposed as part of the subject application, would operate within capacity and the effect arising from the Proposed Development would be considered negligible.

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## 13.8 Monitoring

### 13.8.1 Construction Phase

As part of the Construction Management Plan, traffic management and deliveries will be subject to close monitoring during the construction stage. The contractor's mobility management plan will be subject to oversight on the part of the appointed contractor, with a view to ensuring the plan is operating effectively.

The responsibility for monitoring and reviewing the Plan will be borne by the main contractor. The principal indicators that will be subject to monitoring are as follows (but not limited to):

- Status of complaints received about the passage of Heavy Goods Vehicles.
- Level of compliance with management plans by the main contractor and subcontractors working on site.
- Changes in modal split – both 'usual' and 'occasional' modes used.
- Cycle Parking on site: Include the state of the bike racks and that there are no abandoned bikes without owners.
- Others that may be important.

It is recommended that within three months of the start of construction, and then every six months thereafter, the main contractor meets with Meath County Council, to assess and review the progress of the management plans and to agree targets for the next six months.

### 13.8.2 Operational Phase

The responsibility for monitoring and reviewing the Plan will be borne by the Mobility Management Plan Coordinator. The principal indicators that will be subject to monitoring are as follows:

- Changes in modal split – both 'usual' and 'occasional' modes used.
- Cycle Parking on site: Include the state of the bike racks and that there are no abandoned bikes without owners.
- Bikes purchase through the Cycle to Work scheme.
- Number of car parking permits issued.
- Number of registered carsharers.
- Others that may be important.

An initial travel survey should be carried out by the Mobility Management Plan Coordinator. Once the travel survey has been completed and analysed, the Mobility Management Plan Coordinator will agree annual targets with the main stakeholders (the developer, the occupier(s), the Local Authority, or its agents, etc.) for increasing the percentage of non-car modes of transport.

It is recommended that the Mobility Management Plan Coordinator meet with the stakeholders, officers of the Local Authorities or its agents within six months of the occupation of the building(s) and thereafter every twelve months to assess and review progress of the Plan and agree objectives for the next twelve months.

As a consequence of the evaluation, the following potential outcomes may emerge:

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- The objectives have been achieved, and no further intervention is deemed necessary to ensure alignment with existing local development plans.
- The objectives have not been fully achieved, necessitating the implementation of corrective measures that, due to their scale, can be managed by the Transport Coordinator.
- Large measures: the results are found to be significantly divergent from the stated objectives, which may necessitate the engagement of external consultants to develop the requisite mobility studies and implement the measures deemed necessary to realign the development with the originally stated objectives.

It is recommended that the Mobility Management Plan Coordinator prepare and submit to senior management of the Developer, the residents and the Local Authorities or its agents an annual Monitoring Report.

## 13.9 Interactions

The interactions between this chapter and the other chapters of the EIAR are set out below.

### 13.9.1 Population and Human Health

During the Construction Phase, traffic diversions are anticipated to result in a temporary, slight negative effect on the local population and human health. These diversions will be implemented and managed in accordance with the approved Construction Traffic Management Plan, thereby minimising disruption and ensuring public safety.

During the Operational Phase, changes in traffic patterns are expected to lead to a permanent, slight negative effect on the population and human health. However, these effects are considered to be low in magnitude and not significant in terms of health outcomes. Furthermore, traffic management during this stage will be guided by the Mobility Management Plan, which aims to mitigate any adverse effects and promote sustainable transport solutions.

### 13.9.2 Biodiversity

Species using habitats in close proximity to the development site may experience an increase in disturbance as a result of human activity, noise and vibrations generated during construction activities. Such risks will be mitigated in accordance with this EIAR.

### 13.9.3 Lands and Soil

Material excavated during the Construction Phase will be transported by road for disposal at authorised and approved locations, as detailed in this EIAR. The movement of construction traffic will be managed in accordance with the Construction Traffic Management Plan to minimise disruption and environmental effects.

### 13.9.4 Air Quality

The generation of traffic during the Construction Phase has the potential to affect local air quality. However, these effects are expected to be temporary and will be carefully controlled and monitored in accordance with the measures outlined in this EIAR. Dust suppression

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techniques, vehicle emission controls, and regular air quality monitoring will be implemented to minimise any adverse effects.

During the Operational Phase, the development is expected to result in a modest increase in traffic volumes, which may contribute to a slight, long-term effect on air quality. Nonetheless, this effect is anticipated to be low and not significant, given the scale of the development and the mitigation measures proposed. These include the promotion of sustainable transport modes, such as walking, cycling, and public transport, as detailed in the Mobility Management Plan. The operational phase will also be subject to ongoing monitoring to ensure compliance with national air quality standards and climate objectives.

### 13.9.5 Noise and Vibration

The traffic generated during the Construction Phase has the potential to influence noise and vibration levels in the surrounding area. These effects are expected to be temporary and will be carefully controlled and monitored in accordance with the mitigation measures outlined in this EIAR. Measures such as restricted working hours, use of low-noise machinery, and vibration monitoring will be implemented to minimise disturbance to nearby residents and sensitive receptors.

During the Operational Phase, traffic associated with the development may result in a slight, long-term increase in ambient noise levels. However, this is expected to be low and not significant, given the projected traffic volumes and the nature of the surrounding environment. Noise levels will remain within acceptable thresholds, and the Mobility Management Plan will support strategies to reduce reliance on private vehicles, thereby helping to limit any potential increase in noise and vibration over time.

### 13.9.6 Material Assets - Waste

Excess material excavated during construction works will be transported by road for disposal in approved locations as provided for in this EIAR. Movements of construction traffic will be managed in accordance with the Construction Traffic Management Plan.

## 13.10 Difficulties Encountered When Compiling

There were no difficulties in compiling information.

## 13.11 Conclusion

This section evaluates the potential effects of the proposed residential development located in Rathmullan, Oldbridge, Drogheda, Co. Meath, on the surrounding area in terms of vehicular, pedestrian, and cycle access throughout the lifetime of the development. In addition, the potential impact of vehicular movements during both the construction and operational phases of the Proposed Development is considered.

The chapter outlines the existing conditions at the application site and its surroundings, the characteristics of the proposal in terms of physical infrastructure, the likely effects typically associated with developments of this nature, the anticipated traffic impact on the local road network, and the mitigation measures required to prevent, reduce, or offset any significant adverse effects.

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Based on the information presented, the proposed residential development is considered appropriate for the intended location.

## 13.12 References

The following documents were consulted during the preparation of this Traffic and Transport Assessment:


- Consolidated Meath County Development Plan 2021-2027 (incl. Variations 1, 2 & 3) https://consult.meath.ie/en/consultation/consolidated-meath-county-development-plan-2021-2027-incl-variations-1-2
- Consolidated Louth County Development Plan 2021-2027 (incl. Variations 1 & 2) https://www.louthcoco.ie/en/publications/development-plans/
- https://consult.meath.ie/en/consultation/consolidated-meath-county-development-plan-2021-2027-incl-variations-1-2Construction of a Shared Cycleway/Footway on the Rathmullan Road, Co Meath https://consult.meath.ie/en/consultation/construction-shared-cyclewayfootway-rathmullan-road-co-meath
- Cycle Design Manual https://www.nationaltransport.ie/wp-content/uploads/2023/08/Cycle-Design-Manual_Sept.-2023_Low-Res.pdf
- Eastern and Midland Regional Spatial and Economic Strategy 2019-2031 https://emra.ie/dubh/wp-content/uploads/2020/05/EMRA_RSES_1.4.5web.pdf
- Implementation Roadmap for the National Planning Framework https://npf-cdn-prod.s3.eu-west-1.amazonaws.com/wp-content/uploads/20240502101327/NPF-Implementation-Roadmap.pdf
- National Planning Framework – Project Ireland 2040 www.gov.ie/pdf/?file=https://assets.gov.ie/246231/39baaa8c-48dc-4f24-83bd-84bbcf8ff328.pdf#page=null
- Project Appraisal Guidelines for National Roads Unit 5.3 - Travel Demand Projections. PE-PAG-02017 https://www.tiipublications.ie/library/PE-PAG-02017-03.pdf
- Smarter Travel: A Sustainable Transport Future www.gov.ie/pdf/?file=https://assets.gov.ie/19854/37d829c9748446349ff586045bfbcaba.pdf#page=null
- Spatial Planning and National Roads: Guidelines for Planning Authorities https://www.gov.ie/pdf/?file=https://assets.gov.ie/111220/ef2d43a4-d3a0-418a-b0ba-03340e6d083a.pdf#page=null
- Sustainable Residential Development and Compact Settlements: Guidelines for Planning Authorities. www.gov.ie/pdf/?file=https://assets.gov.ie/280882/af1b1694-6ff4-4a14-b2c6-f104347ffb53.pdf#page=null
- Design Standards for Apartments, Guidelines for Planning Authorities.
- https://assets.gov.ie/static/documents/Planning_Design_Standards_for_Apartments_080725_FINAL.pdf


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- Planning Application Reg. Ref. No. 211669. Traffic Assessment Report. Phased Residential Development at Rathmullan, Drogheda. Co. Meath. NRB Consulting Engineer. May 2021.
  https://www.eplanning.ie/MeathCC/AppFileRefDetails/211669/0
- Planning Application Reg. Ref. No. 211757. Traffic Assessment Report. Phased Residential Development at Rathmullan, Drogheda. Co. Meath. NRB Consulting Engineer. May 2021
  https://www.eplanning.ie/MeathCC/AppFileRefDetails/211757/0

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# 14 MATERIAL ASSETS: WASTE AND UTILITIES

## 14.1 Introduction

This chapter of the EIAR was prepared to assess the potential effects of the Proposed Development on material assets including built services and waste.

### 14.1.1 Quality Assurance and Competency of Experts

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

This report was reviewed by Grainne Ryan, Principal EIA Consultant at DNV. Gráinne is an Environmental Consultant with over 11 years' experience, specialising in EIAs for strategic infrastructure, renewable energy, residential, industrial and pharmaceutical projects. Gráinne has a B.A, in Geography, Planning and Environmental Policy, an MSc in Environmental Policy and a Post Graduate Diploma in Project Management.

This chapter has been approved by Catherine Keogan, Technical Director and EIA Lead at DNV. Catherine is an environmental consultant with 37 years' experience in consultancy, specialising in EIAs for large-scale residential, commercial developments, pharmaceutical, BESS and solar projects working closely with a range of developers, planning consultants and architects within the public and private sector. Catherine has a B.Sc. (Hons) in Analytical Science and a Post Graduate Diploma in Renewable Energy Technology Systems.

## 14.2 Study Methodology

### 14.2.1 Relevant Legislation and Guidance

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

- Environmental Protection Agency (EPA) Guidelines on the Information to be Contained in Environmental Impact Assessment Reports (EIAR) (2022);
- EPA (2021) Best Practice Guidelines for the Preparation of Resource & Waste Management Plans for Construction & Demolition Projects;
- Waste Framework Directive (Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 on waste) as amended by Directive (EU) 2018/851;
- European Union (Waste Directive) Regulations 2020, S.I. No. 323 of 2020;
- Waste Management Acts 1996 (as amended);
- The National Waste Management Plan for a Circular Economy 2024-2030; and
- Meath County Development Plan 2021-2027;
- Louth County Development Plan 2021-2027;

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- Drogheda Joint Urban Area Plan (UAP) – currently under preparation by Louth and Meath County Councils, in accordance with Regional Policy Objective 4.11 of the Eastern Midland Regional Spatial and Economic Strategy (RSES);
- Uisce Éireann Code of Practice for Wastewater Infrastructure (IW-CDS-5030-03);
- Greater Dublin Regional Code of Practice for Drainage Works; and
- Part H (Drainage and Waste Water Disposal) of the Building Regulations.

Definitions of key terms such as “Material Assets,” “Waste,” and “Utilities” are applied consistently throughout this chapter in accordance with the EPA EIAR Guidelines (2022). “Material Assets” refers to physical infrastructure and services including energy, water, wastewater, telecommunications, and waste management systems.

Material Assets is a factor whose meaning has evolved over time. In Directive 2011/92/EU, it included architectural and archaeological heritage. Directive 2014/52/EU now includes those heritage aspects under the factor of Cultural Heritage. Material Assets can now be taken to mean built services and infrastructure. Traffic is included because, in effect, traffic consumes roads infrastructure. Sealing of agricultural land and effects on mining or quarrying potential are considered under the factor of Land and Soils.

In this EIAR, the Material Assets: Waste and Utilities chapter specifically addresses built services and infrastructure including:

- Surface Water Drainage;
- Wastewater Drainage;
- Water Supply;
- Electrical Supply;
- Gas Supply;
- Telecommunications; and
- Waste.

Impacts on other aspects commonly associated with Material Assets, such as Traffic, Population and Human Health, Air and Climate, are assessed in the following chapters of this EIAR:

- Chapter 4: Population and Human Health;
- Chapter 8: Air Quality;
- Chapter 9: Climate; and
- Chapter 13: Traffic.

Impacts arising from land take and soil sealing, defined as the covering of soil with impervious surfaces such as buildings, roads, and paved areas, are considered under Chapter 6: Land and Soils. These impacts include the loss of soil functions, reduced permeability, and changes to natural drainage and biodiversity. This approach aligns with EPA and European Environment Agency guidance on the treatment of land and soil in environmental assessments.

The scope of work undertaken for the impact assessment included a desk-based study of built services, utilities and waste management infrastructure within the area surrounding the site. The desk study involved collecting all the relevant data for the site and surrounding area,

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including published information and details pertaining to the Proposed Development provided by the Applicant and the design team.

This does not include original calculations of capacity and demand. Instead, it draws upon technical assessments and calculations presented in supporting engineering and waste reports prepared by qualified consultants. These include the Engineering Assessment Report (Waterman Moylan, 2025), Resource Waste Management Plan and Operational Waste Management Plan (DNV, 2025), and other documents listed below. All assessments are consistent with the methodologies and standards outlined in the relevant guidelines and legislation referenced in this section.

Information on built assets in the vicinity of the site of the Proposed Development was assembled by the following means:

- ESB Networks Utility Maps;
- Uisce Éireann Utility Plans;
- Gas Networks Ireland Service plans;
- EIR E-Maps;
- Energy, Utilities and Telecommunications Statement (McElligott Consulting Engineers, 2025);
- Site Specific Flood Risk Assessment (SSFRA) (JBA Consulting, 2025);
- Engineering Assessment Report (Waterman Moylan Consulting Engineers Limited, 2025);
- Construction Environmental Management Plan (CEMP) (Waterman Moylan Consulting Engineers Limited, 2025);
- Resource and Waste Management Plan (RWMP) (DNV, 2025);
- Construction Waste Management Plan (CDWMP) (Waterman Moylan Consulting Engineers Limited, 2025);
- Operational Waste Management Plan (OWMP) (DNV, 2025); and
- Construction Environmental Management Plan (Waterman Moylan Consulting Engineers Limited, 2025).

Each of the above reports was reviewed and referenced where relevant throughout this chapter.

All phases of the Proposed Development were considered in the assessment of potential effects on Material Assets and Waste within the study area. Assessment of the likely effects of features of the Proposed Development, was carried out in accordance with the following codes of practice, guidelines, legislation, and plans:

- ESB Networks National Code of Practice for the Customer Interface Version 5 (2021);
- ESB Networks Construction Standards for MV Substation Buildings (2019);
- Uisce Éireann Code of Practice for Water Infrastructure Connections and Developer Services Design and Construction Requirements for Self-Lay Developments July 2020 (Revision 2);
- Uisce Éireann Code of Practice for Wastewater Infrastructure (IW-CDS-5030-03);
- IS EN752, Drain and Sewer Systems Outside Buildings;
- Water Services Acts 2007 to 2017;
- CIRIA Report c753 “The SuDS Manual” (2015);

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- Section 3.2 of the Urban Development and Building Heights: Guidelines for Planning Authorities (2018);
- Waste Framework Directive (Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 on waste) as amended by Directive (EU) 2018/851;
- European Union (Waste Directive) Regulations 2011 - 2020, S.I. No. 323 of 2020;
- Waste Management Acts 1996 to 2011; and
- National Waste Management Plan for a Circular Economy 2024-2030.

Ownership and access to the site are under the control of the Applicant.

### 14.2.2 Description and Assessment of Potential Impacts

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

### 14.2.3 Local and National Waste Action Plans

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

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

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

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

The Plan aims to “prioritise waste prevention and circularity in the construction and demolition sector to reduce the resources that need to be captured as waste”.

In order to achieve the objectives, set out in NWMPCE, it is imperative that robust resource and waste management plans are developed for and designed into the pre-construction, construction and operational phases of the Proposed Development.

For the purposes of this development, the objectives and targets set out in the NWMPCE are addressed through the RWMP and OWMP (DNV, 2025), which outline measures to minimise waste generation and maximise reuse and recovery across all phases of the Proposed Development.

The RWMP and OWMP (DNV, 2025), which support alignment with the NWMPCE, are submitted under separate cover as part of the planning application. These documents have been reviewed as part of this assessment and are referenced throughout this chapter where relevant.

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

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

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

## 14.3 The Existing and Receiving Environment (Baseline environment)

The site of the Proposed Development is located 2.5km to the west of Drogheda town centre, within the southwest environs of Drogheda, Co. Meath. The site comprises a greenfield area extending to 9.20 ha, consisting of open fields used for agriculture.

### 14.3.1 Immediate Surroundings

To the west and south, the site is bordered by agricultural lands, with the M1 motorway located approximately 200 metres to the west of the site. This boundary is effectively screened by established vegetation and planting, providing a natural visual buffer between the site and the motorway.

### 14.3.2 Surface Water Drainage

Within the site, there is currently no surface water network. Externally, there is an existing 1200mm culvert adjacent to Rathmullan Road at the northeast of the site. This culvert merges into a ditch on the opposite side of the existing road. The ditch travels for c.60m northwards before outfalling into the River Boyne which is tidal at this location.

### 14.3.3 Wastewater Drainage

There are no wastewater management requirements at present, and there is currently no existing connection to a public sewer at the site of the Proposed Development. There is an existing foul water drainage network at the junction of Rathmullan Road/Marley's Lane. There is an existing rising main along Rathmullan Road, which runs from the entrance of the Proposed Development to Marleys Lane.

### 14.3.4 Water Supply

There is no water supply or demand at present on site. The site of the Proposed Development is located in an area serviced by mains water supply. There is an existing 150mm High-Performance Polyethylene (HPPE) watermain on Rathmullan Road to the east of the site.

### 14.3.5 Electrical Supply

EirGrid develops and operates the national electricity grid and is responsible for taking electricity from the power generators and delivering it to the distribution network, which is operated by ESB Networks. The high-voltage Irish electricity transmission grid comprises

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6,800km of power lines and operates at 400kV, 220kV and 110kV. Substations provide entry points to, and exits from, the transmission grid.

A number of 110kV stations are located in the area surrounding the site (Drybridge, Oldbridge and Platin) with the closest being the Oldbridge Station (EirGrid Group, Transmission System Map, 2025).

### 14.3.6 Gas Supply

Gas Networks Ireland builds, develops and operates Ireland's gas infrastructure, maintaining over 14,521km of gas pipelines and two sub-sea interconnectors. Gas Networks Ireland is responsible for connecting all new gas customers to the network, and for work on service pipes and meters at customers' premises, on behalf of all gas suppliers in Ireland. There is no gas supply at present on site and none is proposed in the context of the Proposed Development.

### 14.3.7 Telecommunications

In terms of mobile telecommunication for transmission and reception, there are two mobile mast clusters adjacent to the site. To the north of the site, in the Retail Park, is a mast operated by Eir (formerly Meteor) and to the northeast of the site is a group of five cells operated by Three, Eir and Vodafone.

The Department of Climate, Energy and the Environment has published a High-Speed Broadband Map which identifies locations and premises based on the availability of high-speed broadband services. The site is in a blue area where "*where commercial operators are delivering or have indicated plans to deliver high speed broadband services. Operators are continuing to enhance their services in these areas to improve access to high-speed broadband*." (2025).

### 14.3.8 Waste

The Proposed Development is located within Meath County Council's jurisdiction. Meath Council (MCC) is the local authority responsible for setting and administering waste management activities in the area of the Proposed Development. MCC's waste management activities are governed by the requirements set out in the Eastern-Midlands Region Waste Management Plan 2015-2021, which has since been replaced by the National Waste Management Plan for a Circular Economy 2024-2030. The site is a large greenfield site and has no current waste management requirements.

## 14.4 Characteristics of the Proposed Development

A comprehensive description of the Proposed Development is presented in Chapter 2 of this EIAR.

### 14.4.1 Aspects Relevant to this Chapter

This section has been prepared following a review of the SSFRA, Engineering Assessment Report, RWMP and other supporting technical documentation submitted as part of the planning application

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#### *14.4.1.1 Surface Water Drainage*

The surface water generated on site shall drain via gravity and discharge at a restricted rate into the existing 1200mm culvert adjacent to Rathmullan Road at the northeast of the site.

Runoff will be restricted to the equivalent of the existing greenfield runoff and excess stormwater will be attenuated. Surface water shall be restricted via hydrobrakes or similar approved.

In order to comply with the Meath County Development Plan 2021-2027 "Development Design Standards", it is proposed to:

- Separate foul and surface water;
- Include appropriate on-site disposal or surface water;
- Comply with the standards set out in the Greater Dublin Strategic Drainage Study (GDSDS); and
- Implement appropriate Sustainable Drainage Systems (SuDS) measures.

The following SuDS devices have been identified as part of the site SuDS strategy (these are detailed in the Engineering Assessment Report (which is submitted with this planning application under separate cover) prepared for the Proposed Development by Waterman Moylan Consulting Engineers Limited (2025)):

- Water butts – utilised within each residential unit;
- Permeable pavement;
- Swales – utilised in grass verges alongside internal roads;
- Grass detention basin – aboveground located at the green open space areas;
- Flow control device (e.g. hydrobrake) – installed at the outfall manhole of each catchment; and
- Petrol interceptor – installed downstream of each flow control device manhole.

#### *14.4.1.2 Wastewater Drainage*

It is proposed that the foul drainage from the site will drain via a network of gravity sewers to a proposed pumping station located at the low point in the northeastern corner of the site.

Foul water will be pumped from the proposed pumping station and connect to outfalls to the existing foul water drainage network at the junction of Rathmullan Road and Marley's Lane. Uisce Éireann (UÉ) had previously advised that a new pumping station would be required to cater for the Proposed Development. The new pumping station is to be sized to replace the adjacent existing old pumping station and to serve additonal catchment areas.

Two pre-connection enquiries (PCE) were submitted to UÉ, based on the development being constructed in two phases (Reference: CDS230000770 and CDS230000784). Confirmations of Feasibility (CoF) has been received for 198 residential units. The previously issued CoF advised that connection is feasible, subject to upgrades. The CoF is included in the Engineering Assessment Report which forms part of the planning application documentation (Waterman Moylan Consulting Engineers Limited, 2025).

Based on the two COF received, a consolidated PCE covering 240 no residential units has been sent to the UÉ in November 2024, CDS24009836. CoF was received on 1st of April 2025 and is attached in Appendix A of the Engineering Assessment Report (2025). The proposed

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pumping station will pump wastewater to the existing foul water drainage network at the junction of Rathmullan Road/Marley's Lane. There is an existing rising main along the Rathmullan Road which runs from the entrance of the Proposed Development to Marleys Lane. UÉ have indicated in their COF that this existing rising main could be utilised for the Proposed Development. The proposed new pumping station will be designed to facilitate flows from the adjacent Riverbank and Oldbridge Manor Developments.

Foul water sewers within the Proposed Development will be laid to comply with the requirements of the Building Regulations, and in accordance with the recommendations contained in the Technical Guidance Documents, Section H.

Foul water sewers which will be taken into charge will be laid strictly in accordance with UÉ requirements for taking in charge.

In accordance with the Irish Water "Code of Practice for Wastewater Supply", 150mm nominal internal diameter sewers have been proposed for carrying wastewater from 20 properties or less; with 225mm nominal internal diameter sewers carrying Wastewater from more than 20 properties. Furthermore, where there are at least ten dwelling units connected, the 150mm diameter pipes are laid at a minimum gradient of 1:60 for up to nine connected dwelling units.

The pumping station has been located with a 20m separation distance from the nearest dwelling. This complies with Section 5.5 of the Irish Water "Code of Practice for Wastewater Supply", which states that Type 3 pumping stations require a minimum buffer zone of 15m.

#### *14.4.1.3 Water Supply*

Water supply to the site will be provided via a new proposed connection to the existing 150mm High-Performance Polyethylene (HPPE) watermain on Rathmullan Road to the east of the site, which is subject to upgrades. All water supply details shall be in accordance with UÉ requirements.

Two pre-connection enquiries were submitted to UÉ each for 99 residential units based upon the Proposed Development being constructed in two phases (Reference: CDS23000770 and CDS23000784). CoF for 198 residential units has been received. The previously issued CoF advised that connection is feasible, subject to upgrades. The CoF is included in the Engineering Assessment Report which forms part of the planning application documentation (Waterman Moylan Consulting Engineers Limited, 2025). Based on the two COF received, a PCE that covers for 240 no residential units was sent to the UÉ in November 2024, CDS24009836. CoF was received on 1st of April 2025.

According to the previous COF received, UÉ have identified that there are several upgrades required to facilitate the Proposed Development. Water supply to the site will be connected to the existing 150mm watermain which is to be upgraded to 200mm diameter on the Rathmullan Road. c. 140m of existing 150mm diameter watermain needs to be upgraded to 200mm diameter along Rathmullan Road. There is also a requirement for a c. 50m new 450mm diameter watermain together with a new flow control valve. All upgrade works will be carried out by UÉ as part of the connection agreement. All water supply details shall be in accordance with UÉ requirements.

Water demand has also been calculated in the Engineering Assessment Report andis detailed in Figure 14-1.

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*Table 14-1 Estimated Total Water Demand (Waterman Moylan Consulting Engineers Limited, 2025)*

| Description | No. of Units | Population per Unit | PE | Flow l/h/day | Total Discharge (l/d) |
|---|---|---|---|---|---|
| Residential Units | 249 | 2.7 | 673 | 150 | 100,950 |
| Crèche | 411 sqm | | 47 children<br>5 staff | 50 | 2,600 |
| | | | | Total | 103,550 |

The total water requirement from the public supply for the Proposed Development is estimated by Waterman Moylan Consulting Engineers Limited at 103.55m$^3$/day.

#### *14.4.1.4 Electrical Supply*

The Proposed Development will require connection to the national grid for electricity supply. Based on the number of units and associated electrical load, the ESB will require a single sub-station housing and unit sub for the Proposed Development, and this will need to have an adjoining switch room to provide the isolation and distribution needed to serve the Proposed Development.

The sub-station needs to be adjacent to a carriageway to allow the ESB to drive up to it in the event there was a catastrophic transformer failure. Incorporating the substation into the building is not viable as it would have a very adverse impact on the elevation, sterilise a corresponding footprint below it in the basement and unsettle occupiers of units adjoining it.

The electrical infrastructure will support a high-performance, energy-efficient residential scheme. All residential units will be designed and constructed in accordance with the Nearly Zero Energy Building (NZEB) requirements of the 2021 Part L Building Regulations. Each unit will achieve a Building Energy Rating (BER) of A2 or A3, with energy demand significantly reduced compared to previous standards. Compliance with Part L will be demonstrated using DEAP software version 4.2, and renewable energy systems will contribute at least 20% of the total energy demand per dwelling.

#### *14.4.1.5 Gas Supply*

There is no gas supply proposed.

#### *14.4.1.6 Telecommunications*

The site location is adjacent to existing EIR services infrastructure and will provide communications to the Proposed Development (i.e., broadband, phone, TV etc.). A specific site services design layout has been prepared by McElligott Consulting Engineers (drawing 24018-E-002) and allows for the provision of 2 no. 100mm EIR ducts on to the Proposed Development and the subsequent networking required around the site.

All chambers shall be suitably traffic rated for the area in which they are being installed. A 36mm EIR duct shall be provided from the nearest chamber to the houses. EIR Services shall

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terminate within the EIR (Entrance Termination Unit) ETU box, which will be installedon the external party walls of each individual dwelling. An EIR cabinet shall be provided within each apartment block, and services shall be distributed to each apartment from this location.

Additionally, Virgin Media (VM) services will provide communications to the development (i.e., broadband, phone, TV etc.). A specific site services design layout has been prepared by McElligott Consulting Engineers (drawing 22024-E-003) and allows for the provision of 2 No 110mm VM ducts on to the scheme and the subsequent networking required around the site.

VM services comprise of chambers, Node cabinets and ducting. Node cabinets are required to amplify the signal within the development. Each node pillar requires a 15amp LV supply. All chambers shall be suitably traffic rated for the area in which they are being installed. A 50mm VM duct shall be provided from the nearest chamber to the houses catering for a maximum of 10No dwellings per chamber. VM Services shall terminate within the VM ETU box positioned on the external party walls of each dwelling. A VM cabinet shall be provided within each apartment block, and services shall be distributed to each apartment from this location. A Fibre to the Home (FTTH) provision is being made throughout the site with a conduit going from each ETU box into the comms hub for the houses and tubed from the risers into the storeroom for the apartments.

#### *14.4.1.7 Waste*

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

- Prevention: The Principal Contractor will prevent and minimise waste generation where possible by ensuring large surpluses of construction materials are not delivered to the site through coordination with the suppliers, operating a ‘just-in-time’ delivery scheme and ensuring sub-contractors conform to the Construction Enviornmental Management Plan (CEMP). The CEMP submitted with this application (Appendix 6-1 of the EIAR) outlines the overarching principles, and a more detailed, site-specific version will be prepared by the Main Contractor prior to the commencement of the works;
- Reuse: Reusing wastes and surplus materials where feasible and in as many high value uses as possible;
- Recycle: Recycling wastes where possible such as introducing on site crushers to produce waste derived aggregates which, subject to appropriate testing and approvals, may be re-used in the Proposed Development; and
- Disposal: Where disposal of waste is unavoidable, this will be undertaken in accordance with the Waste Management Act 1996, as amended.

## 14.5 Potential Effect of the Proposed Development

### 14.5.1 Construction Phase

#### *14.5.1.1 Surface Water Drainage*

Construction activities have the potential to cause contamination of surface water runoff with entrained sediment or other contaminants from groundworks areas and stockpiled soils. There will be no unauthorised discharge of water (groundwater or surface water runoff) to ground,

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drains or water courses during the construction phase. Surface runoff will be managed during construction and there will be no unauthorised discharges of water from the site.

However, in the event of a rainfall event, surface runoff entering the open excavations could result in mobilisation of identified hydrocarbon contamination in soil and leaching and migration to groundwater beneath the site. The stormwater drainage network for the Proposed Development has been designed and modelled to accommodate the 1-in-100-year storm event, in accordance with the Greater Dublin Strategic Drainage Study (GDSDS) and Irish Water standards.

The potential effects will be negative, slight and short term and is considered non-significant in the context of the EIA Directive. Chapter 7 Hydrology and Hydrogeology of this EIAR, has assessed the potential effects on surface water in further detail.

#### *14.5.1.2 Wastewater Drainage*

Commencement of construction will result in a net increase in the foul water / wastewater produced at the site. Confirmation of feasibility was issued by UÉ and they have advised that a new pumping station is required to cater for the Proposed Development.

Foul water generated during construction will ultimately be treated at the regional Drogheda Wastewater Treatment Plant (WWTP), which serves the wider Drogheda and East Meath area. The CoF issued by UÉ confirms that connection is feasible, subject to upgrades, and implies that the WWTP has sufficient capacity to accommodate the Proposed Development. Final discharge will only occur under a formal connection agreement with UÉ, which will verify available capacity at the WWTP.

Due to the temporary and phased nature of the construction phase, the likely effect of the Proposed Development on the existing foul water network will be negative, slight and short term and is considered non-significant in the context of the EIA Directive. Chapter 7 Hydrology and Hydrogeology of this EIAR, has assessed the potential effects on wastewater in further detail.

#### *14.5.1.3 Water Supply*

Site offices and construction activities will create a demand for water supply to the site. A temporary connection is required to facilitate on-site works for all housing developments. Commencement of construction will therefore result in a net increase in the water demand for the site. Water supply to the Proposed Development will be provided via a new proposed connection to the existing 150mm HPPE watermain on Rathmullan Road to the east of the site subject to upgrades. All upgrade works will be carried out by UÉ as part of the connection agreement. New connection works may cause water supply disruptions during the construction phase. These disruptions will be controlled by UÉ and Meath County Council in accordance with standard protocols. Due to the nature of the works during the construction phase, the likely effect will be negative, imperceptible and short-term and is considered non-significant in the context of the EIA Directive.

#### *14.5.1.4 Electricity Supply*

Construction related activities will require temporary connection to the local electrical supply network. The Main Contractor will apply for a power supply from ESB Networks to power both the compound and the construction site. The size of supply will be calculated to ensure it is

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sufficient to power both the site compounds and construction site activities. A temporary suspension of the network locally to facilitate the connection works may be required during the construction phase, and an additional temporary suspension will also occur when power is provided to the site of the Proposed Development. These temporary suspensions will be controlled by ESB Networks as the statutory undertaker and in accordance with standard protocols. The potential effect from the construction phase of the Proposed Development on the local electrical supply network is likely to be negative to neutral, slight and temporary, depending on the length of temporary network suspensions, and is considered non-significant in the context of the EIA Directive.

#### *14.5.1.5 Gas Supply*

It is not anticipated that there will be a requirement for gas connection during the construction phase.

#### *14.5.1.6 Waste*

A Resource Waste Management Plan (RWMP) has been prepared for the Proposed Development by DNV (2025) and has been submitted with the planning application under separate cover. The construction phase will give rise to the requirement to remove and bring quantities of various materials to and from the site. Construction and excavation related wastes will be created during the construction phase. This has the potential to effect on the local waste management network. Waste will also be generated from construction workers e.g., organic/food waste, dry mixed recyclables (wastepaper, newspaper, plastic bottles, packaging, aluminium cans, tins and cartons), mixed non-recyclables and potentially sewage sludge from temporary welfare facilities provided onsite during the construction phase. Waste printer/toner cartridges, waste electrical and electronic equipment (WEEE) and waste batteries may also be generated infrequently from site offices. Office and canteen waste, including food waste, will be stored in wheelie bins on site and it will be collected by an appropriately authorised waste collector. All wastes generated on site will be sent for recycling, recovery, or disposal to a suitably licensed or permitted waste facility.

A Refurbishment and Demolition Asbestos Survey was undertaken by About Safety Ltd. (August 2025) for the site of the Proposed Development. The asbestos survey is included as an appendix to the Construction Environmental Management Plan (CEMP), which is provided in Volume 3 - Appendices of this EIAR as Appendix 6-1. The survey confirmed the presence of asbestos-containing materials (ACMs), including corrugated roof sheeting and asbestos cement pipe debris, primarily associated with Building 1 and surrounding areas. The asbestos identified was Chrysotile (white asbestos), and the material assessment scores indicate a low potential for fibre release (score of 6), provided the materials are not disturbed. In accordance with the Safety, Health and Welfare at Work (Exposure to Asbestos) Regulations 2006 to 2010, all identified ACMs will be removed and disposed of by a competent asbestos removal contractor prior to any demolition or construction works likely to cause disturbance. The removal will be carried out in accordance with statutory notification requirements and best practice guidelines, including the Health and Safety Authority's "Asbestos-containing materials (ACMs) in Workplaces - Practical Guidelines on ACM Management and Abatement." The appointed contractor will be responsible for determining whether a 14-day statutory notification is required and for preparing a plan of work for the safe removal and disposal of ACMs prior to any demolition or construction works likely to cause disturbance.

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The potential effect from the construction phase on waste recovery and disposal will be negative, slight and short-term and is considered non-significant in the context of the EIA Directive.

### 14.5.2 Operational Phase

#### *14.5.2.1 Surface Water Drainage*

During operation, the site will have increased impermeable surfaces due to the access roads and houses. Surface water runoff from roads and the impermeable areas of the Proposed Development may contain potentially contaminating compounds (petroleum hydrocarbons, metals, and suspended sediments). Surface water from the Proposed Development will be managed in accordance with the principles and objectives of Sustainable Drainage Systems (SuDS). Overall, the likely effect of the surface water drainage strategy for the Proposed Development will be negative, slight and long-term and is considered non-significant in the context of the EIA Directive. Chapter 7 Hydrology and Hydrogeology of this EIAR, has assessed the potential effects on surface water in further detail.

#### *14.5.2.2 Wastewater Drainage*

Foul water from the Proposed Development will be treated in the Drogheda Wastewater Treatment Plant (WWTP) before ultimately discharging to the Boyne Estuary Plume Zone Coastal Waterbody. The increased discharge to the Drogheda WWTP as a result of the Proposed Development, will reduce the overall available capacity of the facility. Foul water from the Proposed Development will only be discharged to the ÚE foul sewer under agreement from ÚE and other applicable statutory consents verifying capacity at the Drogheda WWTP for the Proposed Development. Therefore, it is considered that the likely effect on the water quality from wastewater generated onsite runoff will be negative, imperceptible and long-term and is considered non-significant in the context of the EIA Directive.

#### *14.5.2.3 Water Supply*

Water demand has been calculated, and the total water requirement from the public supply for the Proposed Development is estimated at 101.45m$^3$/day.

Water supply will be provided by the existing UÉ infrastructure subject to upgrades. The operational phase will have an increase in demand which will have a neutral, imperceptible, long-term effect and is considered non-significant in the context of the EIA Directive.

#### *14.5.2.4 Electricity Supply*

Electricity will be required to provide public lighting, domestic lighting, power supply and heating for each individual unit for the Proposed Development along with electric vehicle parking. The Proposed Development is likely to increase demand on the existing electricity supply network. The potential effect from the operational phase on the electricity supply network is likely to be neutral, imperceptible, and long-term and is considered non-significant in the context of the EIA Directive.

#### *14.5.2.5 Gas Supply*

There is no new gas supply proposed.

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#### *14.5.2.6 Telecommunications*

The operational phase will have a marginal increase in demand on the local telecommunications network. The site is located within an area where high speed broadband is available and there are two mobile mast clusters adjacent to the site. To the north of the site, in the Retail Park, is an Eir mast and to the northeast of the site is a group of five cells operated by Three, Eir and Vodafone. The likely effect of the operational phase on the local telecommunications network will be neutral, and imperceptible in the long-term and is considered non-significant in the context of the EIA Directive.

#### *14.5.2.7 Waste*

An Operational Waste Management Plan (OWMP) has been prepared for the Proposed Development by DNV (2025) and has been submitted with the planning application under separate cover. The OWMP has been prepared to ensure that the management of waste during the operational phase of the Proposed Development is undertaken in accordance with current legal and industry standards including the 'Waste Management Act 1996, as amended', and associated Regulations including, 'Protection of the Environment Act 2003 as amended', 'Litter Pollution Act 1997 as amended', the 'National Waste Management Plan for a Circular Economy 2024-2030' and 'Meath County Council Waste Management (Segregation, Storage & Presentation of Household and Commercial Waste) Bye-Laws 2018' (hereinafter referred to as 'the bye-laws').

The operational phase of the Proposed Development will result in an increase in the production of municipal waste in the region and will increase demand on waste collectors and treatment facilities, however, as the surrounding area is urban in nature, waste collection is commonplace. Under the classification system, different types of wastes are fully defined by a code. The List of Waste (LoW) code (previously referred to as European Waste Code or EWC) for typical waste materials expected to be generated during the operation of the Proposed Development are provided in Table 14-1.

*Table 14-2 Expected Waste Types and List of Waste Codes*

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

**Individual waste type may contain hazardous materials*

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The predicted waste types that will be generated at the Proposed Development residential units include the following:

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

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

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

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

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

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

All bins in the shared Waste Storage Areas will be accessible for collection by the waste management contractor. It will be the responsibility of the management company to ensure that bins are accessible for collection from the Waste Storage Areas by the waste management operatives and to assist on collection day to wheel out and replace bins during collection where required.

Occupants of residential houses will be responsible for placing their own bins at the kerb for collection, and for the return of those bins to the storage areas within the curtilage of their

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dwelling in compliance with the MCC Bye Laws which require that bins must not be presented before 6pm the previous night nor left out post collection beyond 9am the day following the day of collection.

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

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

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

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

The capacities of waste collection companies and waste management facilities in County Meath have been designed with forward planning and expansion in mind to cater for a growing population. MCC's Waste Management Strategy and associated plans confirm that existing infrastructure, including kerbside collection services, civic amenity sites, and regional waste treatment facilities, has sufficient capacity to accommodate new residential developments such as the Proposed Development. The OWMP outlines the expected waste volumes and confirms that sufficient infrastructure is in place to manage these volumes without placing undue pressure on the local waste network (DNV, 2025).

It is necessary that all developments provide the infrastructure and services to assist residents to segregate domestic waste at source, in order to reduce the generation and disposal of non-recyclable mixed waste. Existing waste collections currently take place in the local area and during the operational phase, the Proposed Development will be added to an existing collection route. The potential effect from the operational phase on municipal waste disposal is likely to be long-term, negative and slight in nature and is considered non-significant in the context of the EIA Directive.

### 14.5.3 Potential Cumulative Effects

The EC *Guidelines for the Assessment of Indirect and Cumulative Impacts as well as Impact Interactions*, defines cumulative effects as "impacts that result from incremental changes caused by other past, present or reasonably foreseeable actions together with the project". Effects resulting from the interaction of impacts, or from associated or off-site projects, are considered indirect effects. Cumulative effects are often indirect in nature, arising from the accumulation of individually minor impacts.

A review of other off-site developments was completed as part of this assessment. Chapter 2 of this EIAR details the existing, proposed and granted planning permissions on record in the area, a review of these planning permissions has been completed as part of this assessment, without repeating them here.

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It is considered that there is no potential for the Proposed Development to act in-combination with other permitted developments in the vicinity that could cause likely significant effects on;

- Surface water drainage;
- Wastewater drainage;
- Water supply;
- Electrical supply;
- Gas supply;
- Telecommunications; and
- Waste.

Each utility has been assessed individually, and the following conclusions support the cumulative effect assessment:

- Surface Water Drainage: The stormwater drainage network for the Proposed Development has been designed and modelled to accommodate the 1-in-100-year storm event, in accordance with GDSDS and Irish Water standards. No cumulative effect is anticipated as adjacent developments are similarly required to meet these standards;
- Wastewater Drainage: The foul drainage network has been designed to connect to the existing infrastructure at Rathmullan Road/Marley's Lane. UÉ has confirmed feasibility for the Proposed Development, and the new pumping station is designed to accommodate flows from adjacent developments including Riverbank and Oldbridge Manor. Therefore, cumulative effects on foul drainage infrastructure are not anticipated;
- Water Supply: The Proposed Development will connect to the existing 150mm HPPE watermain on Rathmullan Road. UÉ has confirmed that upgrades will be carried out as part of the connection agreement. Water supply capacity has been assessed as sufficient for the Proposed Development and surrounding developments;
- Electricity Supply: ESB Networks will manage temporary and permanent connections. No cumulative effect is expected as each development is assessed independently for load and connection feasibility;
- Gas Supply: No gas connection is proposed during construction or operation, so cumulative effects are not relevant;
- Telecommunications: Infrastructure for EIR and Virgin Media services has been designed to accommodate the Proposed Development. These providers operate scalable networks and no cumulative effect is anticipated; and
- Waste: The Operational Waste Management Plan (OWMP) confirms that the Proposed Development will be integrated into existing municipal waste collection routes. MCC's Waste Management Strategy confirms sufficient capacity to accommodate new developments.

The Proposed Development will entail minimal use of material assets during construction, with temporary connections and phased infrastructure limiting demand on utilities. Construction-related effects are short-term and managed through standard protocols. No significant cumulative effects are anticipated during the construction phase.

It is concluded that there are no other potentially significant cumulative effects on material assets arising from the Proposed Development in combination with the identified existing and permitted off-site developments, as described in Chapter 2 of this EIAR.

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### 14.5.4 "Do Nothing" Effect

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

There would also be no increase in the demand on the existing surface water and wastewater drainage, water, electrical and gas supply or telecommunications. Therefore, the effect on surrounding utilities infrastructure would be neutral.

As the site is zoned for development, in the absence of the Proposed Development, it is likely that a development of a similar nature is likely to be constructed in the future in line with national policy and the development plan objectives. Therefore, the construction and operational phase effects outlined in this assessment are likely to occur in the future, even in the absence of the Proposed Development, and are therefore considered appropriate for the purposes of this EIAR.

## 14.6 Avoidance, Remedial and Mitigation Measures

### 14.6.1 Construction Phase

#### *14.6.1.1 Surface Water*

Specific avoidance, remedial and mitigation measures to be taken during the construction phase with respect to surface water drainage are detailed within Chapter 7 Hydrology and Hydrogeology of this EIAR. All works will be carried out in accordance with the Construction and Environmental Management Plan prepared for the Proposed Development and the Irish Water Code of Practice for Water Infrastructure (July 2020) and the Irish Water Code of Practice for Wastewater Infrastructure (July 2020). The construction of any watermains infrastructure will be in accordance with UÉ standards.

The SSFRA submitted as part of this application, also informs the surface water strategy and mitigation measures.

#### *14.6.1.2 Wastewater Drainage*

Specific avoidance, remedial and mitigation measures to be taken during the construction phase with respect to foul water are detailed within Chapter 7 Hydrology and Hydrogeology of this EIAR. All works will be carried out in accordance with the Construction and Environmental Management Plan prepared for the Proposed Development and the Irish Water Code of Practice for Water Infrastructure (July 2020) and the Irish Water Code of Practice for Wastewater Infrastructure (July 2020). The construction of any wastewater infrastructure will be in accordance with UÉ standards.

Further detail on foul drainage infrastructure and connection feasibility is provided in the Engineering Assessment Report, submitted with this application.

#### *14.6.1.3 Water Supply*

Confirmation of Feasibility has been received by UÉ. Utilities providers will be responsible for the management and any required upgrades of water supply and as such no mitigation measures are required.

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Details of the proposed water supply connection and infrastructure are outlined in the Engineering Assessment Report.

#### *14.6.1.4 Electricity*

New connections for electricity supply will be coordinated with the relevant utility provider and Meath County Council and will be carried out and tested by approved contractors, as per standard protocols and as such no mitigation measures are required.

#### *14.6.1.5 Gas*

There is no gas supply proposed and as such no mitigation measures are required.

#### *14.6.1.6 Telecommunications*

Any new connections required for telecommunications will be coordinated with the relevant utility provider and Meath County Council and will be carried out and tested by approved contractors, as per standard protocols and as such no mitigation measures are required.

#### *14.6.1.7 Waste*

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

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

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- A suitably competent and fully permitted waste management company will be employed to manage waste arising for the construction phase. The appointed waste contractor must have the relevant authorisations for the collection and transport of waste materials, issued by the National Waste Collection Permit Office (NWCPO);
- All waste materials will be transported to an appropriately authorised facility, which must have the relevant authorisations for the acceptance and treatment of the specific waste streams, i.e., a Certificate of Registration (COR) or a Waste Facility Permit (WFP) as granted by a Local Authority, or a Waste/Industrial Emission Licence as granted by the Environmental Protection Agency;
- It is not envisaged that there will be any hazardous waste generated throughout the construction works however, in the event that hazardous soil, or historically deposited waste is encountered during the site bulk excavation phase, the contractor will notify Meath County Council and provide a Hazardous / Contaminated Soil Management Plan, to include estimated tonnages, description of location, any relevant mitigation, destination for disposal/treatment, in addition to information on the authorised waste collector(s). Only authorised facilities will be used and as a result of this, the potential effects at any authorised receiving facility sites will have been adequately assessed and mitigated as part of the statutory consent procedures;
- All identified asbestos-containing materials (ACMs) will be removed and disposed of by a competent asbestos removal contractor in accordance with the Safety, Health and Welfare at Work (Exposure to Asbestos) Regulations 2006 to 2010. The appointed contractor will be responsible for determining whether a 14-day statutory notification is required and for preparing a plan of work for the safe removal and disposal of ACMs prior to any demolition or construction works likely to cause disturbance;
- Waste generated by construction workers will be stored in wheelie bins on site and it will be collected by an appropriately authorised waste collector. All waste generated on site will be sent for recycling, recovery, or disposal to a suitably licensed or permitted waste facility; and
- All waste quantities and types will be recorded and quantified, and records will be retained onsite for the duration of the construction phase.

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

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

- Report to Project Manager on the management of resources and waste at the site;
- Identify all destinations for resources taken off-site;
- Address end-of-waste and by-product notifications with the EPA, where applicable;

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- Maintain full records of all resources (both wastes and other resources) for the duration of the project;
- Delegate responsibility to sub-contractors, where necessary;
- Coordinate with suppliers, service providers and sub-contractors; and
- Prioritise waste prevention and resource salvage.

### 14.6.2 Operational Phase

#### *14.6.2.1 Surface Water*

The operational phase of the Proposed Development presents limited potential for discharge of contaminated runoff to receiving watercourses. Based on the design of the Proposed Development there are limited potential sources of contamination during the operational phase. Surface water will be managed in accordance with the principles and objectives of SuDS and the GDSDS to ensure effective treatment and attenuation prior to off-site discharge.

The SuDS design incorporates the following measures:

- Water butts – utilised within each residential unit;
- Permeable pavement;
- Swales – utilised in grass verges alongside internal roads;
- Grass detention basin – aboveground located at the green open space areas;
- Flow control device (e.g. hydrobrake) – installed at the outfall manhole of each catchment; and
- Petrol interceptor – installed downstream of each flow control device manhole.

Ongoing regular operational monitoring and maintenance of drainage and the SuDS measures will be incorporated into the overall management strategy for the Proposed Development. This will ensure that there are no effects on water quality and quantity (flow regime) during the operational phase of the Proposed Development.

No bulk storage of petroleum hydrocarbon-based fuels is proposed during the operational phase, as heating will be provided via space heating and heat pumps.

Ongoing monitoring and maintenance of the drainage and SuDS systems will be incorporated into the site's operational management strategy to ensure continued effectiveness and compliance with water quality and quantity objectives.

Following the planning application stage, connection agreements will be secured with UÉ to confirm water supply and foul water discharge arrangements. No additional mitigation measures are required beyond those embedded in the design.

#### *14.6.2.2 Wastewater Drainage*

Due to the incorporated design measures relating to foul/wastewater, no additional mitigation measures are required. Following the planning application stage, connection agreements will be secured with UÉ to confirm water supply and foul water discharge arrangements. No additional mitigation measures are required beyond those embedded in the design.

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#### *14.6.2.3 Water Supply*

Confirmation of Feasibility has been received by UÉ. Utilities providers will be responsible for the management and any required upgrades of water supply and as such no mitigation measures are required.

#### *14.6.2.4 Electricity*

Utilities providers will be responsible for the management and any required upgrades of electricity supply and as such no mitigation measures are required.

#### *14.6.2.5 Gas*

There is no gas supply proposed and as such no mitigation measures are required.

#### *14.6.2.6 Telecommunications*

Utilities providers will be responsible for the management and any required upgrades of telecommunications and as such no mitigation measures are required.

#### *14.6.2.7 Waste*

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

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

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

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

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

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

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

Responsibilities outside the remit of the Management Company, such as enforcement of individual resident compliance with waste segregation or illegal dumping, will remain under the jurisdiction of the relevant local authority or enforcement body.

Contingency policies will be in place to ensure continuity of service.

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

The OWMP has reviewed policy alongside best practice guidance and recommendations for sustainable waste and recycling management arrangements for the Proposed Development and ensures a high level of recycling, reuse and recovery at the development and also ensures that waste management is carried out in accordance with the requirements of the Meath County Council Development Plan 2021-2027 and Ireland's National Waste Policy.

### 14.6.3 "Worst Case" Scenario

#### *14.6.3.1 Surface Water*

A worst-case scenario in relation to surface water would be a failure or blockage of drainage infrastructure resulting in surface flooding. However, taking account of the avoidance and mitigation measures, the worst-case scenario is deemed to be an unlikely scenario.

#### *14.6.3.2 Wastewater Drainage*

A worst-case scenario in relation to wastewater drainage would be where construction works resulted in an extended disruption to sewerage systems for existing properties in the area due to unforeseen delays on site. However, taking account of the avoidance and mitigation measures, the worst-case scenario is deemed to be an unlikely scenario.

#### *14.6.3.3 Electricity*

A worst-case scenario in relation to electricity supply would be where construction works resulted in an extended disruption for existing properties in the area due to unforeseen delays on site. However, taking account of the avoidance and mitigation measures, the worst-case scenario is deemed to be an unlikely scenario.

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#### *14.6.3.4 Gas*

There is no gas proposed as part of the Proposed Development and therefore a worst-case scenario has not been assessed.

#### *14.6.3.5 Telecommunications*

A worst-case scenario in relation to telecommunications would be where construction works resulted in an extended disruption for existing properties in the area due to unforeseen delays on site. Utilities providers will be responsible for the management and any required upgrades of telecommunications and as such no mitigation measures are required.

#### *14.6.3.6 Waste*

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

## 14.7 Residual Effects

### 14.7.1 Construction Phase

#### *14.7.1.1 Surface Water Drainage*

Having regard to the prevention and mitigation measures proposed within this and other chapters of the EIAR, the residual effects on surface water drainage will be neutral, imperceptible and short-term.

#### *14.7.1.2 Wastewater Drainage*

Having regard to the prevention and mitigation measures proposed within this and other chapters of the EIAR, the residual effects on wastewater will be neutral, imperceptible and short term.

#### *14.7.1.3 Water Supply*

Having regard to the prevention and mitigation measures proposed within this and other chapters of the EIAR, the residual effects on water supply will be negative, imperceptible and short term.

#### *14.7.1.4 Electricity*

Having regard to the prevention and mitigation measures proposed within this and other chapters of the EIAR, the residual effects on electrical supply will be negative to neutral, slight and temporary, depending on the length of temporary network suspensions.

#### *14.7.1.5 Waste*

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

- The prevention and mitigation measures proposed within this and other chapters of the EIAR;

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- Compliance with national legislation and the allocation of adequate time and resources dedicated to efficient waste management practices;
- Continued use of permitted/licensed waste hauliers and facilities. Waste removed from the facility will be managed appropriately and will avoid environmental effects or pollution. In addition, the correct management and storage of waste will avoid litter or pollution issues at the site; and
- The identification and planned removal of asbestos-containing materials (ACMs) by a competent contractor in accordance with statutory requirements, ensuring no residual risk from hazardous waste.

### 14.7.2 Operational Phase

#### *14.7.2.1 Surface Water*

Having regard to the prevention and mitigation measures proposed within this and other chapters of the EIAR, the residual effects on surface water drainage will be neutral, imperceptible and long-term.

#### *14.7.2.2 Wastewater Drainage*

Having regard to the prevention and mitigation measures proposed within this and other chapters of the EIAR, the residual effects on wastewater will be neutral, imperceptible and long-term.

#### *14.7.2.3 Water Supply*

No mitigation measures are proposed in relation to water supply therefore the residual effects will have a neutral, imperceptible, long-term effect.

#### *14.7.2.4 Electricity*

No mitigation measures are proposed in relation to electrical supply therefore the residual effects will have a neutral, imperceptible, long-term effect.

#### *14.7.2.5 Telecommunications*

Having regard to the prevention and mitigation measures proposed within this and other chapters of the EIAR, the residual effects on telecommunications will remain as neutral, and imperceptible in the long-term.

#### *14.7.2.6 Waste*

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

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## 14.8 Monitoring

### 14.8.1 Construction Phase

The site control measures to manage and minimise waste include:

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

During the construction phase, a procedure for waste auditing will be in place as per the RWMP which has been prepared for the planning application and is submitted under separate cover. The purpose of the waste auditing is to identify any problems with the site's waste procedures and also the benefits of prevention and minimisation that is in place. The audit will be a 'self-audit' process carried out by the Resource Manager and/or appointed team member/contractor. The RM will create an Audit Plan and identify the appropriate frequency at which the audits are to be conducted over the course of the construction phase. The waste audit will document details of the quantity, type and composition of all waste removed from the site. The audit findings will highlight any corrective actions that may need to be taken in relation to waste management procedures or site practices. These corrective actions will be tracked in order to identify root-causes as appropriate (DNV, 2025).

### 14.8.2 Operational Phase

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

## 14.9 Interactions

### 14.9.1 Population and Human Health

In the absence of mitigation, the improper removal, handling, and storage of waste could have adverse effects on the health of construction workers. Additionally, extended or disruptions to power, telecommunications, water supply, or sewerage systems affecting existing properties in the area could adversely impact the health and wellbeing of the local population. However, the comprehensive mitigation measures, which will be implemented, detailed in Section 14.6, including strict waste management protocols, adherence to relevant Codes of Practice, and close coordination with utility providers, are designed to prevent or minimise these risks. Consequently, Chapter 4: Population and Human Health of this EIAR concludes that no long-term, significant adverse effects on population health are anticipated as a result of the Proposed Development.

### 14.9.2 Land and Soil

Improper handling and segregation of hazardous or contaminated wastes could lead to the contamination of soil and stones excavated from the site. It is also anticipated that some excavated soil and subsoil, including soil contaminated with petroleum hydrocarbons and solvents, will require removal offsite. Additionally, there is a requirement to import aggregates

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during the construction phase of the Proposed Development. Potential effects on land and soil are addressed in Chapter 6 of this EIAR.

### 14.9.3 Hydrology and Hydrogeology

All connections to the public water network (water supply or foul sewer), abstractions from water supply and discharges to the foul sewer during the construction and operational phases will be under consent from UÉ. Potential effects on water and hydrology are addressed in Chapter 7 of this EIAR.

### 14.9.4 Climate

The Proposed Development has been designed in accordance with all relevant building design standards. Sustainable power and heat sources have been included as part of the building design to reduce reliance on imported fossil fuels and reduce greenhouse gases (GHG) emissions. Direct and indirect effects of the Proposed Development on climate (for example greenhouse gas emissions) and its vulnerability to climate change are assessed in Chapter 9.

### 14.9.5 Traffic

The Proposed Development will require the removal of excavated soil and transportation to appropriate waste facilities during the construction phase. It is anticipated that all excavated materials will require removal offsite in accordance with all statutory legislation. This has the potential to negatively affect the surrounding road network. The removal of all soil from the site will be undertaken in accordance with all applicable statutory legislation and will be the responsibility of the main contractor. Potential effects on traffic are addressed in Chapter 13 of this EIAR.

## 14.10 Difficulties Encountered When Compiling

No difficulties were encountered in the preparation of this chapter.

## 14.11 Conclusion

The assessment of likely effects resulting from the Proposed Development on built services and waste in this chapter has identified the existing infrastructure in the surrounding area in relation to surface water, wastewater, water supply, electrical supply, gas supply, telecommunications and waste. Where relevant, appropriate mitigation and monitoring measures have been detailed.

It is reasonably considered that following all mitigation measures including design embedded and prescribed, adequate implementation of the CEMP, RWMP and OWMP and adherence to construction best practice that no significant effects to built services and waste will arise from the Proposed Development during the construction or operational phases. Accordingly, the site is considered suitable for development as proposed.

## 14.12 References

Construction Environmental Management Plan, Waterman Moylan Consulting Engineers Limited, 2025.

Construction Waste Management Plan, Waterman Moylan Consulting Engineers Limited, 2025.

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Eastern-Midlands Region (EMR) Waste Management Plan 2015-2021.

Engineering Assessment Report, Waterman Moylan Consulting Engineers Limited, 2025.

Environmental Protection Agency (EPA) (2022) Guidelines on the Information to be Contained in Environmental Impact Assessment Reports.

Flood Risk Assessment, JBA Consulting, 2025.

EPA (2021) Best Practice Guidelines for the Preparation of Resource & Waste Management Plans for Construction & Demolition Projects.

EPA (2019) By-Product Guidance Note: A guide to by-products and submitting a by-product notification under Article 27 of the European Communities (Waste Directive) Regulations 2011 (S.I. No. 126 of 2011).

EPA (2002) Guidelines on the information to be contained in Environmental Impact Statements.

ESB Networks (2021) National Code of Practice for the Customer Interface Version 5.

ESB Networks (2019) Construction Standards for MV Substation Buildings.

European Union (Waste Directive) Regulations 2011-2021.

Health and Safety Authority (2010) Code of Practice for Avoiding Danger from Underground Services.

Irish Water Code of Practice for Water Infrastructure Connections and Developer Services Design and Construction Requirements for Self-Lay Developments July 2020 (Revision 2).

Litter Pollution Act 1997 as amended.

Local Government Ireland (2024) The National Waste Management Plan for a Circular Economy 2024-2030.

Meath County Development Plan, 2021-2027.

Meath County Council Waste Management (Segregation, Storage & Presentation of Household and Commercial Waste) Bye-Laws 2018.

Operational Waste Management Plan, DNV, 2025.

Resource Waste Management Plan, DNV, 2025.

Waste Framework Directive (Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 on waste) as amended by Directive (EU) 2018/851.

Waste Management Acts 1996 to 2011.

Water Services Acts 2007 to 2017.

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# 15 RISK MANAGEMENT

## 15.1 Introduction

This chapter sets out the assessment of the vulnerability of the Proposed Development to risks of major accidents and/or disasters. It assesses the expected effects of the project to the risk of major accidents and disasters including the methodology used for the assessment. The interactions and mitigation and monitoring measures are included in Chapters 16 and 17 of this EIAR respectively.

### 15.1.1 Quality Assurance and Competency of Experts

This chapter was prepared by Lakshmi Priya Mohan, Environmental Consultant within DNV's EIA team. Lakshmi has a M.Sc. degree in Environmental Science degree from University College Dublin, a M.Sc. degree in Zoology from Ethiraj College for Women, India, and a B.Sc. in Zoology from Madras Christian College, India.

The report has been reviewed by Gráinne Ryan, Principal Consultant with DNV. Gráinne has worked in consulting for over 11 years. Gráinne's project experience in the waste, pharmaceutical, residential, industrial and commercial sectors cover the planning, consenting and operational stages. Gráinne has a B.A, in Geography, Planning and Environmental Policy, an MSc in Environmental Policy and a Post Graduate Diploma in Project Management.

This chapter has been approved by Catherine Keogan, Technical Director and EIA Lead at DNV. Catherine is an environmental consultant with 37 years' experience in consultancy, specialising in EIAs for large-scale residential, commercial developments, pharmaceutical, BESS and solar projects working closely with a range of developers, planning consultants and architects within the public and private sector. Catherine has a B.Sc. (Hons) in Analytical Science and a Post Graduate Diploma in Renewable Energy Technology Systems.

## 15.2 Study Methodology

### 15.2.1 Scope and Context

The relevant legislation that applies to this chapter is the Planning and Development Regulations 2001 as amended, and in particular Schedule 6 – Information to be contained in EIAR. The following paragraph of Schedule 6, Paragraph 2(e)(i)(IV), specifically refers to "*a description of the likely significant effects on the environment of the proposed development resulting from … the risks to human health, cultural heritage or the environment (for example due to accidents or disasters)*".

Paragraph 2(h) further expands with "*a description of the expected significant adverse effects on the environment of the proposed development deriving from its vulnerability to risks of major accidents and/or disasters which are relevant to it. Relevant information available and obtained through risk assessments pursuant to European Union legislation such as the Seveso III Directive or the Nuclear Safety Directive or relevant assessments carried out pursuant to national legislation may be used for this purpose, provided that the requirements of the Environmental Impact Assessment Directive are met. Where appropriate, this description should include measures envisaged to prevent or mitigate the significant adverse*

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*effects of such events on the environment and details of the preparedness for, and proposed response to, emergencies arising from such events*."

Annex III to the EIA Directive 2011/92/EU requires that "*the risk of accidents, having regard in particular to substances or technologies used*" arising from a project subject to EIA be assessed.

Additionally, the Chemicals Act (Control of Major Accident Hazards involving Dangerous Substances) Regulations 2015 (S.I. No. 209 of 2015) (the "COMAH Regulations"), which implement the Seveso III Directive (2012/18/EU), and which revoked the 2006 Major Accident Regulations also applies to this chapter.

### 15.2.2 Guidelines and Reference Material

Cognisance has been taken of the Guidelines on the Information to be Contained in Environmental Impact Assessment Reports (EPA 2022). This document follows the requirements laid out in the Directive 2014/52/EU.

Specifically, the EPA Guidelines state that the EIAR must take account of "*the vulnerability of the project to risk of major accidents and /or disasters relevant to the project concerned and that the EIAR therefore explicitly addresses this issue. The extent to which the effects of major accidents and / or disasters are examined in the EIAR should be guided by an assessment of the likelihood of their occurrence (risk)… The potential for a project to cause risks to human health, cultural heritage or the environment due to its vulnerability to external accidents or disasters is considered where such risks are significant, e.g., the potential effects of floods on sites with sensitive plants. Where such risks are significant then the specific assessment of those risks in the form of a Seveso Assessment (where relevant) or Flood Risk Assessment may be required. The EIAR should refer to those separate assessments while avoiding duplication of their contents*."

Reference has also been made to the Department of the Environment, Heritage & Local Government (DoEHLG) Publication 'Guide to Risk Assessment in Major Emergency Management 2010' and the Office of Emergency Planning, Department of Defence (DOD) Publication 'A National Risk Assessment for Ireland 2020'. A consolidated list of national hazards for Ireland identified in the DOD document are identified in Table 15-1.

*Table 15-1 Consolidated List of National Hazards (Source: A National Risk Assessment for Ireland (2020) Department of Defence)*

| Hazard: Civil | Hazard: Natural |
|---|---|
| • Large Crowd Event<br>• Pandemic<br>• Water Supply Distribution and Contamination<br>• Food Chain Contamination<br>• Animal Disease<br>• Terrorist Incident | • Storm<br>• Snow and Ice (including pro-longed low temperature)<br>• Flooding (including pluvial, fluvial and coastal) |
| **Hazard: Transportation** | **Hazard: Technological** |
| • Maritime Incident<br>• Air Incident | • Structural Collapse (including Dam, Tunnel, Bridge and Building) |

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| Hazard: Civil | Hazard: Natural |
|---|---|
| • Transport Hub (including Air-ports, Ports and Rail Stations) | • Nuclear Incident (Abroad)<br>• Cyber Incident<br>• Disruption of Energy Supply (including oil, gas, electricity and communications) |

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### 15.2.3 Risk Assessment Methodology

The risk assessment methodology used in this assessment consists of the general risk assessment methods which are best practice in the industry. Hazard analysis and risk assessment are accepted internationally as essential steps in the process of identifying the challenges that may have to be addressed by society, particularly in the context of emergency management. Mitigation as a risk treatment process involves reducing or eliminating the likelihood and/or the effect of an identified hazard (DoEHLG, 2010).

In addition to standalone risk assessment, cumulative effects have been considered in the context of other permitted and Proposed Developments near the site in Chapter 2 (Description of the Proposed Development). This includes potential interactions that may amplify risks related to emergency management, infrastructure capacity, and environmental resilience. The assessment draws on planning data and consultation with local authorities to ensure that cumulative risks are appropriately identified and mitigated.

Table 15-2: Classification of National Likelihood Criteria (Source: A National Risk Assessment for Ireland (2020) Department of Defence)

| National Likelihood Criteria | | |
|---|---|---|
| **Rating** | Classification | Average Recurrence Interval |
| **1** | Extremely Unlikely | 500 or more years between occurrences |
| **2** | Very Unlikely | 100-500 years between occurrences |
| **3** | Unlikely | 10-100 years between occurrences |
| **4** | Likely | 1-10 years between occurrences |
| **5** | Very Likely | Less than 1 year between occurrences |

## 15.3 Predicted Effects

The Proposed Development has been designed in accordance with best practice and the contents of this EIAR demonstrate that the Proposed Development can be safely undertaken without risk to health.

In order to understand the potential consequences and effects of any major accident or disaster arising from the Proposed Development and the vulnerability of the Proposed Development to same, a desktop assessment was undertaken. The assessment reviewed:

- The vulnerability of the project to major accidents or disasters.

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- The potential for the project to cause risks to human health, cultural heritage and the environment, as a result of any identified vulnerabilities.

A methodology has been used which is predicated upon the following phases:

**Phase 1: Assessment**

The DOD Consolidated List of National Hazards was used to identify a preliminary list of potential major accident and disasters. Receptors covered by legislation were not included within the assessment e.g., construction workers.

**Phase 2: Screening**

The list was screened and major events caused by geological faults or natural phenomena were screened out such as earthquakes, volcanic eruptions and tsunamis, given the unlikely event of one occurring. Elements already addressed as a key part of the design e.g. risks of building collapse, were not repeated.

**Phase 3: Mitigation and Evaluation**

In the event that mitigation measures identified did not totally mitigate against the potential risk, then, the potential effects on receptors are identified in the relevant chapter. Table 15-3 lists the major accidents and/or disasters reviewed.

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*Table 15-3: Major Accidents and/or Disasters Reviewed*

| Major Accident or Disaster | Relevant for this Proposed Development? | Why relevant? | Potential Receptor | Covered within EIAR? |
|---|---|---|---|---|
| **Civil** | | | | |
| Large Crowd Event (An event with over 5,000 people) | N | Not considered vulnerable due to the nature of the Proposed Development, i.e. Residential Development. | N/A | N/A |
| Water Supply Contamination | N | Waterborne diseases can be caused by consuming contaminated drinking water. No public health issues have been identified for the Proposed Development. | Local water supply users | Chapter 7 Hydrology and Hydrogeology of this EIAR identifies the control measures required to avoid contamination of water supplies during operational works. |
| Food Chain Contamination | N | Not considered vulnerable. | N/A | N/A |
| Animal Disease | N | Not considered vulnerable. | N/A | N/A |
| Terrorist Incident | N | Not considered vulnerable. | N/A | N/A |
| **Transportation** | | | | |

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| | | | | |
|---|---|---|---|---|
| Maritime Incident | Y | Drogheda Port is located approximately 3.5km east of the site. While it is geographically close, it is not considered vulnerable in the context of this Proposed Development due to several factors:<br>i. the site is located inland and is not directly connected to navigable waterways;<br>ii. the nature of operations at Drogheda Port does not pose a direct risk to the Proposed Development, as it primarily handles bulk cargo with established containment and emergency protocols; and<br>iii. the prevailing wind and tidal patterns do not support the transmission of maritime hazards from the port to the site.<br>Furthermore, the site is not within the designated emergency planning zones for port-related incidents.<br>Clogherhead Harbour is located approximately 14.5km northeast of the site. Skerries Harbour is located approximately 24km southeast of the site. | Port users and infrastructure | N/A |
| Air Incident | N | Not considered vulnerable. The closest international airport is Dublin Airport which is located approximately 33.5km south of the site. Considering the distance between the Proposed Development and the nearest aerodrome and airfield, and Public Safety Zones, an aircraft strike disaster is not considered relevant to the Proposed Development. | N/A | Public Safety Zones for Dublin Airport are assessed in Section 15.4 of this chapter. |
| Transport Hub (Includes Airports, Ports and Rail Stations) | N | The site is not a Transport Hub and therefore is not considered vulnerable in this regard. Drogheda train station is located approximately 3.6km east and Drogheda port located approximately 3.5km east of the site. | N/A | N/A |
| **Natural** | | | | |
| Cultural, Archaeological and Architectural Heritage | Y | There is one known site of archaeological interest within the Proposed Development site, recorded as ME020-072---- on the SMR. The construction phase will include groundworks, such as topsoil stripping, which has the potential to affect any small or isolated archaeological features or deposits that have the potential to survive beneath the current ground level. | Cultural Heritage | Chapter 12 (Archaeology and Cultural Heritage) identifies the potential vulnerability of the project to effects on archaeological and cultural heritage resources and outlines measures to avoid, reduce, or mitigate adverse effects on known and potential heritage assets within and surrounding the site of the Proposed Development. |

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| | | | | |
|---|---|---|---|---|
| Landslides | N | The site also has a “Low” landslide susceptibility classification (GSI, 2025). However, a small area adjacent to the eastern boundary of the site is classified as ‘moderately low’ and ‘moderately high’. A small area adjacent to the northern boundary of the site is classified as ‘moderately low’. There are two landslide locations that are identified within 30km radius of the site. The Landslide location GSI_LS12-0335 is located approximately 1.8km southwest of the site and GSI_LS06-0302 is located approximately 2.1km northeast of the site. | N/A | Chapter 6 (Land and Soils) identifies the vulnerability to landslides, and outlines measures incorporated into the design and construction methodology to avoid or mitigate such risks at the site of the Proposed Development. |
| Earthquakes | N | The site is not considered vulnerable as the area is not geologically active. | N/A | N/A |
| Floods/ Storm surge/tidal flooding | N | The Proposed Development is at low risk of flooding and should be classified as Flood Zone C. The Flood Risk Assessment (FRA) confirms that the development can manage risk in agreement with the core principles contained within the Planning System and Flood Risk Management Guidelines for Local Authorities (DoEHLG & OPW, 2009). | Proposed Development | Chapters 7 (Hydrology) and 9 (Climate) identify the vulnerability of the Proposed Development to flooding.and climate-related risks and outline the findings of the FRA, which confirms that appropriate measures have been incorporated into the design to manage and mitigate these risks in accordance with national guidance. |
| Severe weather such as storms, blizzards, droughts, tornados, heatwaves | N | Not considered vulnerable.<br>In the event of severe weather events, the national meteorological service, Met Éireann, provides advance notice of severe weather, usually several days in advance. When appropriate, colour-coded weather warnings are issued. The Office of Emergency Planning works with the government departments and other key public authorities in order to ensure the best possible use of resources and compatibility across different emergency planning requirements. | N/A | Chapter 9 Climate of this EIAR assessed the vulnerability of the Proposed Development to severe weather. |
| Air Quality events | N | Chapter 8 (Air Quality) identifies that the Proposed Development is not considered vulnerable to significant air quality effects. Nonetheless, it outlines proactive measures to minimise emissions during the construction phase, including the use of dust suppression techniques and the requirement for vehicles and machinery to be turned off when idle. These measures are consistent with best practice and are designed to ensure compliance with relevant air quality standards and guidance. | Construction workers/local businesses/employees | Chapter 8 Air Quality of this EIAR identifies preventative measures to be taken with regards to protecting ambient air quality. |

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| | | | | |
|---|---|---|---|---|
| Wildfires | N | Not considered vulnerable due to the location of the site of the Proposed Development. | N/A | N/A |
| Fire | N | Chapter 14 (Risk Management) identifies fire as a potential risk associated with the Proposed Development, particularly during the construction and operational phases. While the likelihood of fire is low, its consequences such as potential loss of life, property damage, and environmental harm, warrant consideration. The design incorporates fire safety measures in accordance with building regulations and fire codes, and emergency response planning has been integrated to ensure risks are appropriately managed. | Residents, service users, members of the public and nearby properties. | Section 15.4.1 identifies fire as a potential risk associated with the Proposed Development and outlines a range of fire prevention and mitigation measures. These include the integration of fire-resistant materials in construction, provision of adequate access for emergency services, and installation of fire detection and suppression systems in accordance with building regulations. These measures are designed to reduce the likelihood of fire and minimise its potential effect on occupants, property, and the surrounding environment. |
| Invasive species | N | No invasive species were recorded at the site. Therefore, the proposed works are not expected to result in the spread of invasive species. | Native species / local biodiversity | Chapter 5 (Biodiversity) identifies the vulnerability of the project to invasive species and details measures to avoid the introduction or dissemination of invasive species to and from the site of the Proposed Development. |
| **Technological** | | | | |
| Structural Collapse (Building) | N | This has been taken into consideration in the building design. All buildings have been designed to modern standards. No further assessment is required. | N/A | The design criteria of the buildings are in accordance with all relevant building design standards. |
| Structural Collapse (Dam, Bridge, Tunnel) | N | Not considered vulnerable as no dams, bridges or tunnels are proposed as part of the Proposed Development. | N/A | N/A |

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| | | | | |
|---|---|---|---|---|
| Flood defence failure | N | Appropriate drainage design, SuDS and attenuation design, have all been included in the design of the Proposed Development and will be installed according to appropriate regulations and guidelines. | Residents, service users, members of the public and nearby properties. | Chapter 7 (Hydrology and Hydrogeology) identifies the vulnerability of the project to flooding and outlines measures to manage and mitigate flood risk. These include site-specific drainage design, attenuation systems, and compliance with the recommendations of the FRA, ensuring that the Proposed Development remains resilient to potential hydrological effects. |
| Nuclear incident | N | Not considered vulnerable. | N/A | N/A |
| Cyber incident | N | Not considered vulnerable. | N/A | N/A |
| Disruption of energy supply (oil, gas, electricity) | N | Not considered vulnerable.<br>ESB Networks maintain the electricity network in Ireland. Gas Networks Ireland maintain the natural gas network in Ireland. | N/A | Chapter 14 (Material Assets – Waste and Utilities) identifies the infrastructure requirements of the Proposed Development, including energy supply, and outlines measures to ensure adequate provision and resilience. |
| Utilities failure (communications) | N | Not considered vulnerable.<br>In Ireland, the fixed-line communications market is primarily served by operators such as Eir, Virgin Media, Vodafone, and Sky Ireland, with Eir. Mobile telecommunications infrastructure is operated by Eir, Vodafone, and Three, who collectively account for the majority of mobile subscriptions. Coordination with service providers will ensure the integration of high-speed broadband and mobile connectivity in line with national infrastructure standards. | N/A | Chapter 14 (Material Assets – Waste and Utilities) identifies the telecommunications requirements of the Proposed Development and outlines measures to ensure reliable connectivity. |
| Utilities failure (water supply) | N | Not considered vulnerable | N/A | Chapters 7 (Hydrology and Hydrogeology) and 14 (Material Assets – Waste and Utilities) identify the water supply requirements of the Proposed Development and outline measures to ensure adequate and sustainable provision. |

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| | | | | |
|---|---|---|---|---|
| Utilities failure (wastewater, sewage) | N | Not considered vulnerable | N/A | Chapters 7 (Hydrology and Hydrogeology) and 14 (Material Assets – Waste and Utilities) identify the wastewater and sewage treatment requirements of the Proposed Development and outline measures to ensure effective collection, removal, and treatment. |
| Utilities failure (solid waste) | N | Not considered vulnerable | N/A | Chapter 14 (Material Assets – Waste and Utilities) identifies the solid waste management requirements of the Proposed Development and outlines measures for its removal and treatment. These include the provision of segregated waste collection facilities, adherence to local authority waste management protocols, and implementation of construction and operational waste minimisation strategies in line with national waste policy. |
| Industrial accidents (defence, energy, oil and gas refinery, food industry, chemical industry, manufacturing, quarrying, mining) | Y | The Flogas Ireland Limited Upper Tier Seveso site is located approximately 5.7km east of the site. Grassland Agro, Slane Lower Tier Seveso site is located approximately 9km west of the site. These sites are regulated under the EU Seveso III Directive due to the presence of hazardous substances.<br>Despite their classification, these facilities are not considered to present a significant risk to the Proposed Development due to their distance from the site, the absence of direct physical or operational links, and the robust safety and containment measures required under Seveso regulations. Furthermore, the Proposed Development lies outside the consultation zones defined for emergency planning purposes, and no pathways for off-site effect have been identified. | N/A | N/A |

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## 15.4 Management Plans

### 15.4.1 Emergency Response Plan

Emergency Response Plans outlines the emergency preparedness measures to be implemented during the construction phase of the Proposed Development. These include the development of site-specific emergency response procedures prior to commencement of works, regular maintenance and safety checks, and coordination with local emergency services. Although the risk of fire is considered low due to the nature of the proposed operations, the plan accounts for increased labour, machinery, and vehicle movements on-site. The strategy ensures appropriate provision for fire safety, evacuation protocols, and incident management in line with health and safety regulations and best practice construction standards.

### 15.4.2 Public Safety Zone

Public Safety Zones (PSZs) are mapped out around airport runways to protect the public on the ground from possible aircraft crashes in populated areas. PSZs are used to prevent inappropriate use of land where the risk to the public is greatest, e.g., by limiting the type and allowable height of buildings and structures within the zones.

The site is located approximately 33.5km north of the Dublin Airport which is outside the PSZs of the airport runways. The next closest airport is Belfast International Airport which is located approximately 105km north of the Proposed Development. Considering the distance between the Proposed Development and the nearest airfield, and associated PSZs, an aircraft strike disaster is not considered relevant to the Proposed Development.

### 15.4.3 Potential Major Emergency Management Sites and Seveso Sites

Seveso Sites are defined as industrial sites that due to the presence of dangerous substances in sufficient quantities, are regulated under Council Directives 96/82/EC and 2003/105/EC, commonly referred to as the Seveso II Directive. Seveso Sites are categorised as Lower, or Upper, by the type and quantity of hazardous substances stored at the site.

The Proposed Development is not a regulated site under the Chemicals Act (Control of Major Accident Hazards involving Dangerous Substances) Regulations (2015) (COMAH), which implement the Seveso III Directive (2012/18/EU), and it is not connected to a regulated site.

While the Proposed Development site is located within County Meath adjacent to the border with County Louth, the site is in the Garda Division of Louth which includes the districts of Drogheda, Dundalk and Ardee. The closest Upper Tier Seveso Site is The Flogas Ireland Limited site located approximately 5.7km east of the site. The closest Lower Tier Seveso Site is the Grassland Agro, Slane site located approximately 9km west of the site. The Figure 15-1 shows the Proposed Development site as a red star, the Flogas site to the east in red and the Grassland Argo, the orange circle to the west.

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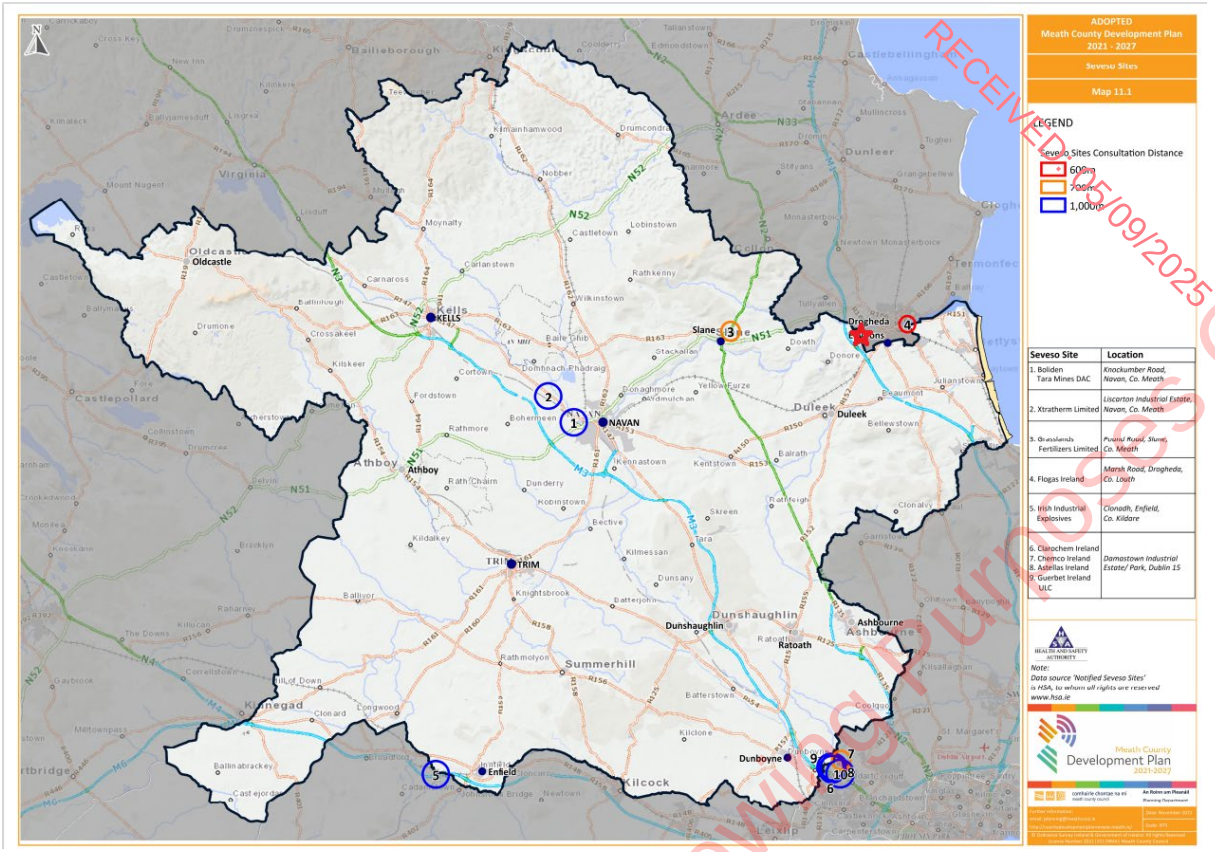



*Figure 15-1: Seveso Sites located within near to the Proposed Development (Meath County Development Plan 2021-2027)*

### 15.4.4 Flood Risk Management

There are no surface water features recorded on the EPA database (EPA, 2025) within the site boundary. There are two identified watercourses in the local area. The River Boyne flows from west to east adjacent to the northern boundary of the site and Sheephouse Stream Ditch, located adjacent to Rathmullan Road running in a south-north direction.

The Proposed Development is at low risk of flooding and should be classified as Flood Zone C. The Flood Risk Assessment was undertaken in accordance with 'The Planning System and Flood Risk Management' guidelines and confirm that the development can manage risk in agreement with the core principles contained within (JBA Consulting, 2025).

The Flood Risk Assessment and Management Plan for the Meath CDP 2020-2026 states that,

*'The management plan confirms that the risk from the River Boyne and Stagrennan River is significant, and a flood relief scheme is viable, the scheme protects areas within County Louth only. The tidal River Boyne presents fluvial and tidal flood risk. There is some conflict between Flood Zone A/B in A2 zoned land to the west and E2 zoned land to the east. The opportunity to manage land use zonings will only become available as part of the preparation of the Joint Urban Area Plan for Drogheda by Meath and Louth County Councils. It is likely that the flood risk in the A2 lands is overestimated and a review of this should be undertaken when the land use zonings are considered.'*

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## 15.5 Residual Effects

Control measures will be put in place on site for health and safety and environmental management as per conditions of the planning permission, relevant codes of practices and relevant legislation.

Through the implementation of mitigation measures detailed in the relevant technical chapters of this EIAR, there are no identified incidents or examples of major accidents and or natural disasters that present a sufficient combination of risk and consequence that would lead to significant residual effects or environmental effects as a result of the Proposed Development, alone or in combination with other projects.

## 15.6 Monitoring

There is no monitoring required with regards to risk management. All monitoring proposals for the interacting chapters have been detailed in the relevant technical chapters and are included in Chapter 17 Mitigation Measures and Monitoring.

## 15.7 Difficulties Encountered When Compiling

No difficulties were encountered in completing this chapter

## 15.8 Conclusion

The risk assessment undertaken as part of this EIAR has considered a comprehensive range of potential risks, including flooding, fire, industrial accidents, air quality, waste management, and infrastructure vulnerabilities. Each relevant chapter has identified specific risks and outlined appropriate mitigation measures in accordance with national and local planning guidance, including the Planning System and Flood Risk Management Guidelines and the Meath County Development Plan 2020–2026.

The site is located in Flood Zone C and is not considered vulnerable to significant flood risk. Nearby Seveso sites has been assessed and are not deemed to pose a risk to the Proposed Development due to their distance and containment protocols. Fire risk is low and will be managed through a site-specific Emergency Response Plan. Air quality, waste, water, and utility infrastructure have been addressed through coordinated planning and design.

Taking all of the above into account, the site is considered suitable for development, with risks appropriately identified, assessed, and mitigated to ensure the safety, resilience, and sustainability of the Proposed Development.

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## 15.9 References


- Chapters 4 to 14 of Volume 2 of this EIAR
- Environmental Resources Management Ireland Ltd (2005) Public Safety Zones Report
- Environmental Protection Agency (2022) Guidelines on the Information to be Contained in Environmental Impact Assessment Reports
- Garda Mapping Section – Seveso Sites Ireland WebMap https://www.arcgis.com/home/item.html?id=a01b5a0a6ff24f10adff30beaa3b6fd0
- Irish Water Greater Dublin Area water restrictions chart https://www.water.ie/help/supply/water-shortages/
- Office of Emergency Planning (2020) 'A National Risk Assessment for Ireland 2020' Department of Defence Publication
- Statutory Instrument (SI). No. 296/2018 - European Union (Planning and Development) (Environmental Impact Assessment) Regulations 2018


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# 16 INTERACTIONS

## 16.1 Introduction

As a requirement of the Planning Regulations and the Environmental Protection Agency's '*Guidelines on information to be contained in Environmental Impact Assessment Reports*' (2022), interrelationships between various environmental aspects must be considered when assessing the impact of the Proposed Development, as well as individual significant effects. The significant effects of the Proposed Development and the proposed mitigation measures have been detailed in the relevant chapters of this EIAR. However, as with all developments that pose potential environmental effects, there also exists potential for interactions/interrelationships between the effects of different environmental aspects. The results may exacerbate or ameliorate the magnitude of effects. This chapter of the EIAR addresses the interactions between the various environmental factors of the Proposed Development.

The following Section is directed by Article 3 section 1(e) of the EIA Directive. The EPA Guidelines on the information to be contained in Environmental Impact Assessment Reports (EPA, 2022), Advice Notes for Preparing Environmental Impact Statements (Draft, September 2015) and OPR Practice Note PN02 Environmental Impact Assessment Screening (June 2021) were also considered.

Article 3 of the Directive states:

1. *The 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)*

## 16.2 Study Methodology

The interactions between effects on different environmental factors have been addressed throughout this EIAR. Close co-ordination and management with the EIAR team was carried out to ensure that all likely relevant interactions were addressed at the scoping stage of the EIAR, and interactions have been adequately assessed.

Following an assessment of the EIAR, a matrix was produced to display where interactions between effects on different factors have been addressed. This has been carried out by use of chapter headings included in the EIAR and details of any interaction during all phases of the Proposed Development.

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## 16.3 Competency of the Authors

This chapter has been prepared by Darragh Grant, Environmental Consultant with DNV. Darragh is an EIA practitioner with a BSc in Zoology (University College Dublin) and an MSc in Environmental & Climate Law (University College Dublin).

This chapter has been reviewed by Michelle Gaffney Senior EIA Consultant with DNV, with over 4 years' experience in environmental consultancy. Michelle holds a B.A (Hons) in Earth Science from Trinity College Dublin and is currently advancing expertise through an MSc in Environmental Sustainability at University College Dublin. Michelle has been involved in the technical input into a range of Environmental Impact Assessment Report chapters and has been involved in the project management and delivery of a range of EIARs of a similar scale and nature to the Proposed Development.

This chapter has been approved by Catherine Keogan, Technical Director and EIA Lead at DNV. Catherine is an environmental consultant with 37 years' experience in consultancy, specialising in EIAs for large-scale residential, commercial developments, pharmaceutical, BESS and solar projects working closely with a range of developers, planning consultants and architects within the public and private sector. Catherine has a B.Sc. (Hons) in Analytical Science and a Post Graduate Diploma in Renewable Energy Technology Systems.

## 16.4 Interactions

The following matrix has been produced to show where potential significant interactions between effects on different factors have been addressed, see Table 16-1.

In preparing the EIAR each of the specialist consultants have and will continue to liaise with each other and will consider the likely interactions between effects predicted as a result of the Proposed Development during the preparation of the proposals for the site and this ensures that mitigation measures are incorporated into the design process.

As this EIAR document has been prepared by a number of specialist consultants an important aspect of the EIA process is to ensure that interactions between the various disciplines have been taken into consideration.

The principal interactions requiring information exchange between the environmental specialists and the design team are summarised in Table 16-2 to Table 16-12.

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*Table 16-1: Interactions between Factors*

| Interaction | 4. Population and Human Health | 5. Biodiversity | 6. Land and Soils | 7. Hydrology and Hydrogeology | 8. Air Quality | 9. Climate | 10. Noise and Vibration | 11. Landscape and Visual | 12. Archaeology and Cultural Heritage | 13. Material Assets: Traffic and Transport | 14. Material Assets: Waste and Utilities |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Population and Human Health** | | x | ✓ | ✓ | ✓ | ✓ | x | ✓ | x | ✓ | ✓ |
| **Biodiversity** | x | | ✓ | ✓ | ✓ | ✓ | x | ✓ | x | ✓ | x |
| **Land and Soils** | x | x | | ✓ | ✓ | ✓ | x | ✓ | x | ✓ | ✓ |
| **Hydrology and Hydrogeology** | ✓ | ✓ | ✓ | | x | ✓ | x | x | x | x | ✓ |
| **Air Quality** | ✓ | ✓ | ✓ | x | | x | x | x | x | ✓ | x |
| **Climate** | x | x | x | x | ✓ | | x | x | x | x | ✓ |
| **Noise and Vibration** | ✓ | ✓ | x | x | x | x | | x | x | ✓ | x |
| **Landscape and Visual Amenity** | ✓ | ✓ | ✓ | x | x | x | x | | x | x | x |
| **Archaeology, Architectural and Cultural Heritage** | ✓ | x | x | x | x | ✓ | x | ✓ | | x | x |
| **Material Assets: Traffic and Transport** | ✓ | x | ✓ | x | ✓ | x | ✓ | ✓ | x | | ✓ |
| **Material Assets: Waste and Utilities** | ✓ | x | ✓ | ✓ | x | x | x | x | x | ✓ | |

| | |
|---|---|
| | No Interaction |
| | Potential Interaction |
| | N/A |

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*Table 16-2. Population and Human Health*

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| **Population and Human Health** | |
|---|---|
| **Summary** | |
| Chapter 4 of this EIAR (Population and Human Health) details the direct and indirect effects of the Proposed Development on Population and Human Health; and sets out any required mitigation measures where appropriate.<br><br>The Proposed Development has the potential to cause dust nuisances during the construction phase as well as noise and vibrations from plant machinery and traffic. | |
| **Interactions** | |
| **Hydrology and Hydrogeology** | There is a potential for effects on surface water and groundwater quality, which may have direct implications for human health if contamination affects drinking water sources or recreational waters. Chapter 7 (Hydrology and Hydrogeology) of this EIAR assesses the effects and sets out the mitigation measures required to minimise these effects. |
| **Air Quality** | Chapter 8 (Air Quality) of this EIAR provides essential information on potential emissions arising from both the construction and operational phases of the Proposed Development. These emissions, particularly particulate matter and nitrogen dioxide from construction machinery and increased traffic, can affect respiratory health. Chapter 8 (Air Quality), sets out the mitigation measures required to minimise effects. |
| **Noise and Vibration** | Noise and vibrations are key environmental stressors that can influence human health through annoyance, sleep disturbance, and stress-related impacts. Chapter 10 (Noise and Vibration) of this EIAR assesses predicted noise levels during both the construction and operational phases, particularly in relation to sensitive receptors such as residential dwellings and the proposed crèche. Chapter 10 (Noise and Vibration) sets out the mitigation measures required to minimise these effects. |
| **Landscape and Visual** | Changes to the visual environment can influence mental wellbeing and perceived quality of life, particularly in rural or scenic areas. Chapter 11 (Landscape and Visual) of this EIAR evaluates the visual impact of the Proposed Development on the surrounding area, including views from public spaces and residential properties. Chapter 11 (Landscape and Visual) assesses the effects and sets out the mitigation measures required to minimise these effects. |

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| **Archaeology and Cultural Heritage** | Chapter 12 (Archaeology and Cultural Heritage), of this EIAR assesses the potential for impacts on heritage assets and tourism-related features. These elements contribute to community identity, local economy, and amenity value. Chapter 12 (Archaeology and Cultural Heritage) assesses the effects and sets out the mitigation measures required to minimise these effects. |
| **Material Assets-Traffic and Transport** | Chapter 13 (Material Assets-Traffic and Transport) of this EIAR informs the Population and Human Health assessment by identifying changes in traffic volumes, patterns, and access during both phases of the Proposed Development. Increased traffic can contribute to air and noise pollution, road safety concerns, and reduced accessibility for pedestrians and cyclists. These factors are considered in terms of their potential to affect physical health, mental wellbeing, and access to services, particularly for vulnerable groups. The inclusion of pedestrian and cycling infrastructure is also evaluated for its potential to support active travel and healthier lifestyles. Chapter 13 (Material Assets-Traffic and Transport) assesses the effects and sets out the mitigation measures required to minimise these effects. |
| **Material Assets-Waste and Utilities** | Chapter 14 (Material Assets-Waste and Utilities) of this EIAR provides information on the capacity of local infrastructure, including water supply, wastewater treatment, and public services such as education and healthcare. These are critical to the assessment of human health, as insufficient capacity can lead to service strain, reduced quality of life, and health inequalities. Chapter 14 (Material Assets-Waste and Utilities) assesses the effects and sets out the mitigation measures required to minimise these effects. |
| **Conclusions** | |
| Potential effects have been outlined in the respective chapters specified above. The mitigation measures outlined in the respective chapters outlined above will ensure that there will be no significant adverse effects on the health of the population situated around the Proposed Development. | |

*Table 16-3. Biodiversity*

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| **Biodiversity** | |
| **Summary** | |
| The potential for interactions between biodiversity and other environmental factors has been considered in accordance with the EPA Guidelines (2022), on the Information to be Contained in EIAR. While the findings of this assessment conclude that no significant adverse effects to biodiversity are likely to occur, it is recognised that ecological receptors can be indirectly affected by environmental changes assessed under other chapters of | |

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| this EIAR. Key receptors requiring consideration include otter, protected bird species, the River Boyne, oak-ash-hazel woodland habitat, and hedgerows of local biodiversity value. |
| **Interactions** |

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|---|---|
| **Hydrology and Hydrogeology** | The adjacent river forms a major hydrological feature that supports otter and aquatic biodiversity. While construction activities carry a theoretical risk of surface water contamination or sedimentation, appropriate water management and mitigation measures (e.g. silt fencing, bunding, sediment traps) have been incorporated to prevent discharge to the watercourse. As such, no significant interaction with aquatic ecology or downstream designated sites is anticipated. |
| **Air Quality** | Dust generation during groundworks may affect adjacent vegetation, particularly hedgerows and woodland understorey. However, given the scale and duration of the proposed works, combined with standard dust suppression measures, the potential for dust-related effects on flora or bird habitats is minimal. |
| **Noise and Vibrations** | Elevated noise levels during construction could potentially disturb otter holts and couches or displace sensitive bird species. However, field surveys confirmed no active otter holts within the proximity (> 150m) from the Proposed Development site. Additionally, no breeding birds nor their supporting habitat were recorded in proximity to construction works. Additionally, noise emissions are expected to remain within acceptable thresholds, and no long-term disturbance effects are predicted. |
| **Landscape and Visual** | Artificial lighting associated with construction and operation has the potential to affect nocturnal species such as otter, bats and bird species. However, directional and low-spill lighting designs have been specified to minimise night-time illumination of ecologically sensitive areas, particularly along the riparian corridor. |

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| **Conclusions** |
| While Biodiversity has potential linkages with other environmental factors, the implementation of embedded design measures, standard mitigation practices, and best environmental management will ensure that no significant residual interactions are likely to occur. This integrated approach contributes to the protection of ecological receptors and supports compliance with relevant national and EU biodiversity legislation. |

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*Table 16-4. Land and Soils*

| **Land and Soils** | |
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| **Summary** | |
| Chapter 6 (Land and Soils) of this EIAR, details the potential direct and indirect effects of the Proposed Development on the local land, soils, and geology; and sets out required mitigation measures where appropriate. There are a number of potential pollutants associated with the construction and operational phases which have the potential to impact on the environment. The excavation and infilling of soils at the site have the potential to generate nuisance effects such as dust, noise and sediment run-off. Consideration is given to habitats and species protected by national and international legislation or considered to be of particular conservation importance. | |
| **Interactions** | |
| **Population and Human Health** | There is a potential risk of dust generated from excavation and stockpiling of soil during the construction phase of the Proposed Development, posing a human health risk in the absence of standard avoidance and mitigation measures which will be implemented to be protective of human health. Appropriate industry standard and health and safety legislative requirements will be implemented during the construction phase of the Proposed Development that will be protective of site workers. The potential effects associated with airborne dust is addressed in chapter 4 (Population and Human Health) and chapter 8 (Air Quality) of this EIAR. Specific issues relating to population and human health associated with the Proposed Development are set out in chapter 4 of this EIAR. |
| **Biodiversity** | An assessment of the potential effects of the Proposed Development on the biodiversity of the site, with emphasis on habitats, flora and fauna which may be effected as a result of the excavation and importation of materials to the site are included in chapter 5 (Biodiversity) of this EIAR. It also provides an assessment of the effects of the Proposed Development on habitats and species, particularly those protected by national and international legislation or considered to be of particular conservation importance and proposes measures for the mitigation of these effects. |
| **Hydrology and Hydrogeology** | In the absence of avoidance, remedial, and mitigation measures, construction activities may potentially create pathways for potential sources of contamination to enter underlying groundwater. During the construction phase of the Proposed Development, groundwater vulnerability is expected to temporarily increase. Construction activities will involve the use of potentially hazardous materials such as cementitious materials, fuels, oils, and other substances. An uncontrolled release of these materials, whether through containment failure or handling accidents, could affect the surrounding environment. In addition, in the absence of avoidance, remedial and mitigation measures, there is a potential for sediment from excavated |

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| | soils to enter water runoff and discharge into the Boyne Estuary via the Sheephouse 07 River which crosses a small area of the southeastern boundary of the site along Rathmullan Road receiving local drainage. Procedures for the protection of the receiving water environment are set out in chapter 7 (Hydrology and Hydrogeology) of this EIAR. |
| **Air Quality** | The excavation of soils across the site and the temporary stockpiling of soils pending reuse or removal offsite has the potential to generate nuisance effects (i.e., dust) during the construction phase of the Proposed Development. An assessment of the potential effect of the Proposed Development on air quality is included in chapter 8 (Air Quality) of this EIAR. |
| **Landscape and Visual** | During the construction phase and into the operational phase of the Proposed Development, the site landscape will undergo a change from undeveloped lands to residential use. An assessment of the potential effect of the Proposed Development on the receiving landscape is included in chapter 11 (Landscape and Visual Impact) of this EIAR. |
| **Material Assets- Traffic, Transport, Waste and Utilities** | An assessment of the potential effect of the Proposed Development on the material assets (Traffic and Transport) and material assets (Waste and Utilities) are included in chapter 13 and chapter 14 of this EIAR, respectively. Where possible, it is intended to retain and re-use the excavated soil and subsoil on the site for engineering fill and landscaping. However, where required, unsuitable soil and subsoil will be removed offsite in accordance with all statutory legislation. There is also a requirement to import soil, subsoil and aggregate materials during the construction phase of the Proposed Development. |
| **Conclusions** | |
| Potential effects have been outlined in the respective chapters outlined above. The mitigation measures outlined in the CEMP and the respective chapters will ensure that there will be no significant adverse effects on the receiving land, soil and geology associated with the construction phase and the operational phase of the Proposed Development. | |

*Table 16-5. Hydrology and Hydrogeology*

| **Hydrology and Hydrogeology** |
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| **Summary** |
| Chapter 7 (Hydrology and Hydrogeology) of this EIAR provides an assessment of the potential effects of the Proposed Development on hydrology, water and hydrogeology and sets out required mitigation measures where |

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| appropriate. Consideration is given to habitats and species protected by national and international legislation or considered to be of particular conservation importance. | |
| **Interactions** | |
| **Population and Human Health** | An assessment of the potential effect of the Proposed Development on human health is included in chapter 4 (Population and Human Health) of this EIAR. Pollution events can affect the water quality and thus effect the human health of the surrounding population. Appropriate surface water control measures will be implemented as part of the Proposed Development. Appropriate industry standard and health and safety legislative requirements will be implemented during the construction phase of the Proposed Development, that will be protective of site workers (e.g., during the removal of asbestos at the farm buildings). |
| **Biodiversity** | An assessment of the potential effects of the Proposed Development on the biodiversity of the site, with emphasis on habitats, flora and fauna which may be affected as a result of the excavation and importation of materials to the site is included in chapter 5 (Biodiversity) of this EIAR. It also provides an assessment of the effects of the Proposed Development on habitats and species, particularly those protected by national and international legislation or considered to be of particular conservation importance and proposes measures for the mitigation of these effects. |
| **Land and Soils** | An assessment of the potential effect of the Proposed Development on the land and soils is included in chapter 6 (Land and Soils) of this EIAR. During the construction of earthworks, heavy rainfall events have the potential to mobilise contaminated runoff and effect the usability of materials stored onsite. This could therefore require the importation of additional material from external sources. Mitigation measures to reduce the risk of damage to construction materials from heavy rainfall and flood events are outlined in chapter 7 (Hydrology and Hydrogeology) of this EIAR. |
| **Material Assets-Waste and Utilities** | An assessment of the potential effect of the Proposed Development on the material assets - waste and utilities including built services and infrastructure, has been set out in chapter 14 (Material Assets-Waste and Utilities) of this EIAR. During the construction phase of the Proposed Development discharges of water to the public foul sewer will be in accordance with the necessary discharge licence issued by Uisce Éireann under Section 16 of the Local Government (Water Pollution) Acts and Regulations. During the operational phase of the Proposed Development, any discharges to the public foul sewer and water supply to the Proposed Development will be under consent from Uisce Éireann. |
| **Conclusions** | |

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The protective/avoidance/mitigation measurements that will be applied as set out in the Construction Environmental Management Plan (CEMP), will ensure that the Proposed Development will not give rise to any likely significant effects.

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*Table 16-6. Air Quality*

| **Air Quality** | |
|---|---|
| **Summary** | |
| Chapter 8 (Air Quality) of this EIAR provides an assessment of the potential effects of the Proposed Development on ambient air quality and sets out appropriate mitigation measures where necessary. The greatest potential effects on air quality includes dust from the construction phase of the Proposed Development. | |
| **Interactions** | |
| **Population and Human Health** | Air Quality has a direct interaction with population and human health, particularly in relation to the potential exposure to dust and traffic-related pollutants. The Proposed Development has the potential to generate dust during construction and emissions form traffic during operation, which could affect nearby sensitive receptors if not properly managed. However, the mitigation measures employed at the Proposed Development will ensure that all effects are compliant with ambient air quality standards, and that the exposure levels remain below thresholds known to impact human health. Furthermore, traffic-related pollutants have been assessed using the Transport for Ireland Road Emissions Model and determined as having an overall negligible effect. Therefore, air quality effects from the Proposed Development are not expected to have a significant impact on population and human health. |
| **Biodiversity** | Interactions between air quality and biodiversity have been considered in conjunction with chapter 5 (Biodiversity) of this EIAR. During the construction phase, dust emissions could potentially affect nearby habitats and species. However, the mitigation measures outlined in the Biodiversity chapter will minimise dust deposition and no significant impacts on designated sites or sensitive ecological receptors are anticipated. |
| **Land and Soils** | Construction phase activities such as land clearing, excavations, stockpiling of materials etc. have the potential to generate dust, which may interact with land and soil. This interaction has been considered alongside Chapter 6 (Land and Soils) of this EIAR. With the application of the appropriate dust control measures, no significant effects are predicted during the construction phase. There are no |

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| | potentially significant interactions identified during the operational phase between air quality and land and soils. |
| **Climate** | Air quality and climate are interrelated due to shared sources of emissions, particularly from the combustion of fossil fuels during both the construction and operational phases of the Proposed Development. These activities generate pollutants that contribute to both local air quality impacts and global climate change. While air quality does not directly influence climate, the sources of emissions that affect both are closely linked. As such, the assessment of air quality has been undertaken in parallel with the climate assessment presented in Chapter 9 (Climate) of this EIAR to ensure consistency in the evaluation of emissions and their potential impacts. |
| **Material Assets-Traffic and Transport** | Traffic is a key source of air quality impacts, particularly during the operational phase. This interaction has been assessed in detail in Chapter 13 (Material Assets-Traffic and Transport) of this EIAR. The Transport for Ireland Road Emissions Model was used to evaluate traffic-related emissions, and the results indicate that the Proposed Development will not result in significant air quality effects due to traffic. Therefore, no significant interaction between air quality and traffic is anticipated. |
| **Conclusions** | |
| Mitigation measures employed at the Proposed Development will ensure that no significant effects occur. | |

*Table 16-7. Climate*

| **Climate** |
|---|
| **Summary** |
| Chapter 9 (Climate) of this EIAR, provides an assessment of the potential effects of the Proposed Development on the climate and sets out appropriate mitigation measures where necessary. Climate interactions with various environmental topics are extensive and significant, highlighting the broad impact of climate factors across different aspects of the environment. One of the most critical interactions is between climate and greenhouse gas (GHG) emissions. The Proposed Development's carbon footprint, which includes emissions from construction activities, energy use, and transportation, plays a role in influencing climate change. Effective management and reduction of these emissions are crucial to mitigate the project's contribution to global warming and to comply with regulatory requirements and sustainability targets. |

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| Interactions | |
|---|---|
| **Population and Human Health** | Population and human health are closely linked to climate factors, with climate change potentially exacerbating health issues such as heat stress, respiratory conditions, and vector-borne diseases. The Proposed Development's impact on local climate conditions and its potential influence on public health must be carefully assessed to prevent adverse health outcomes. |
| **Biodiversity** | Interactions between climate and biodiversity have been considered as changes in temperature and precipitation patterns can alter habitat conditions, disrupt species distributions, and affect ecological balances. These shifts may impact local flora and fauna, necessitating careful consideration of conservation measures to protect biodiversity within and around the development area. |
| **Land and Soils** | Land and soil interactions with climate are critical, with changes in climate affecting soil moisture, erosion rates, and land productivity. Increased rainfall may lead to soil erosion, while extended dry periods can degrade soil quality. Addressing these interactions is essential for maintaining soil health and implementing sustainable land use practices. |
| **Hydrology and Hydrogeology** | Interactions between hydrology and climate can occur due to climate variability, such as increased rainfall or prolonged droughts, which can affect water availability, quality, and management practices. This includes effects on stormwater runoff, flood risk, and water supply. The Proposed Development will incorporate effective water management strategies to address these potential issues and ensure resilience to changing climate conditions. |
| **Archaeology and Cultural Heritage** | Cultural heritage sites are at risk due to climate change, with increased weathering, flooding, and temperature fluctuations potentially accelerating their deterioration. Protecting these valuable resources requires assessing the potential impacts of climate change and implementing appropriate conservation measures. |
| **Conclusions** | |
| The Proposed Development's interactions with the climate encompass a range of factors including GHG emissions, water resources, biodiversity, soil, human health, and cultural heritage. Effective mitigation strategies and robust monitoring will be essential to address these interactions, minimise adverse effects, and ensure the Proposed Development's resilience to climate change. Mitigation and monitoring measures are set out in chapter 9 (Climate) of this EIAR. | |

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*Table 16-8. Noise and Vibration*

| **Noise and Vibration** | |
|---|---|
| **Summary** | |
| Chapter 10 (Noise and Vibration) of this EIAR provides a description and assessment of the likely effect of the proposed activities from noise and sets out appropriate mitigation measures where necessary. Noise-generating activities during the construction phase are expected not to have adverse implications for biodiversity. Noise associated with the operation of on-site machinery will not create any major negative effects beyond the site boundary. Mitigation and monitoring measures will be incorporated to further reduce the potential for noise generation from the Proposed Development. | |
| **Interactions** | |
| **Material Assets-Traffic and Transport** | There is an interaction between noise and traffic through the generation of construction and operational stage traffic. Overall, the assessments in this EIAR predict that there will be no significant noise effect generated during either the construction or operational phase of the Proposed Development site, in the context of existing traffic flows. |
| **Conclusions** | |
| Noise associated with the machinery will not create any significant adverse effects beyond the site boundary. Mitigation and monitoring measures will be incorporated to further reduce the potential for noise generation from the Proposed Development. | |

*Table 16-9. Landscape and Visual*

| **Landscape and Visual** |
|---|
| **Summary** |
| Chapter 11 (Landscape and Visual) of the EIAR provides a description and assessment of the likely impact of the Proposed Development on the landscape and visual amenities of the area. |
| **Interactions** |

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| **Population and Human Health** | In the preparation of chapter 4 (Population and Human Health), regard has been had to the results of the Landscape and Visual Impact Assessment (LVIA), as impacts on landscape and visual amenity can in turn negatively affect residential amenity in affected areas |
| **Biodiversity** | The landscape proposals, through discussions with the project ecologists, seek to compensate for any necessary loss of habitat (see chapter 5-Biodiversity), through compensatory planting of a mix of suitable trees and other plants which include both native and non-native species that are pollinator friendly in order to for the scheme to achieve an overall net ecological gain. |
| **Land and Soils** | The potential interaction with land and soils will occur during the construction phase with movement of material through/off the site and its temporary storage on site. The landscape proposals will seek to reuse the excavated soil and subsoil material where possible or the areas of new planting and profiling for the lands. |
| **Archaeology and Cultural Heritage** | The areas rich archaeological and cultural heritage (see chapter 12-Archaeology and Cultural Heritage) assets within the Boyne Valley have been considered as part of initial and final viewpoint selection processes. A number of viewpoints (VP no. 3,4,5 and 6, see chapter 11: Landscape and Visual Assessment) were selected as representative of views experienced by heritage assets and in respect of which photomontages were then produced to help determine the Proposed Developments' potential visibility and any possible impacts upon these assets existing setting. |
| **Material Assets: Traffic and Transport** | The potential for interaction with traffic and transport will include impacts upon the landscape character and visual amenity, as a result of changes to the existing traffic levels (walkers/cyclist/vehicles) within the immediate surroundings during the initial construction and later operational phases. |
| **Conclusions** | |
| Based on the assessment undertaken, no significant interactions are anticipated in relation to the landscape and visual aspects of the surrounding environment arising from the Proposed Development. | |

*Table 16-10. Archaeology and Cultural Heritage*

| **Archaeology and Cultural Heritage** |
|---|
| **Summary** |
| Chapter 12 (Archaeology and Cultural Heritage) of the EIAR provides information on the known architectural, archaeological, and cultural heritage sites in the study area. |

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| Interactions | |
|---|---|
| | There are no interactions to note for chapter 12 (Archaeology and Cultural Heritage). |
| **Conclusions** | |
| There are no interactions to note for chapter 12 (Archaeology and Cultural Heritage). | |

*Table 16-11. Material Assets-Traffic and Transport*

| Material Assets-Traffic and Transport | |
|---|---|
| **Summary** | |
| Chapter 13 (Material Assets-Traffic and Transport) of the EIAR provides an assessment of the potential effects of the Proposed Development on material assets including traffic, built services and infrastructure. | |
| **Interactions** | |
| **Population and Human Health** | During the construction phase, traffic diversions are anticipated to result in a temporary, slight negative impact on the local population and human health. These diversions will be implemented and managed in accordance with the approved Construction Traffic Management Plan, thereby minimising disruption and ensuring public safety. During the operational phase, changes in traffic patterns are expected to lead to a permanent, slight negative impact on the population and human health. However, these effects are considered to be low in magnitude and not significant in terms of health outcomes. Furthermore, traffic management during this stage will be guided by the Mobility Management Plan, which aims to mitigate any adverse effects and promote sustainable transport solutions. |
| **Biodiversity** | Species using habitats in close proximity to the Proposed Development site may experience an increase in disturbance as a result of human activity, noise and vibrations generated during construction activities. Such risks will be mitigated in accordance with this EIAR. |
| **Land and Soil** | Material excavated during the construction phase will be transported by road for disposal at authorised and approved locations, as detailed in this EIAR. The movement of construction traffic will be managed in accordance with the Construction Traffic Management Plan to minimise disruption and environmental effects. |

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| | |
|---|---|
| **Air Quality** | The generation of traffic during the construction phase has the potential to affect local air quality. However, these effects are expected to be temporary and will be carefully controlled and monitored in accordance with the measures outlined in this EIAR. Dust suppression techniques, vehicle emission controls, and regular air quality monitoring will be implemented to minimise any adverse effects. During the operational phase, the development is expected to result in a modest increase in traffic volumes, which may contribute to a slight, long-term effect on air quality. Nonetheless, this effect is anticipated to be low and not significant, given the scale of the Proposed Development and the mitigation measures proposed. These include the promotion of sustainable transport modes, such as walking, cycling, and public transport, as detailed in the Mobility Management Plan. The operational phase will also be subject to ongoing monitoring to ensure compliance with national air quality standards and climate objectives. |
| **Noise and Vibration** | The traffic generated during the construction phase has the potential to influence noise and vibration levels in the surrounding area. These effects are expected to be temporary and will be carefully controlled and monitored in accordance with the mitigation measures outlined in this EIAR. Measures such as restricted working hours, use of low-noise machinery, and vibration monitoring will be implemented to minimise disturbance to nearby residents and sensitive receptors. During the operational phase, traffic associated with the development may result in a slight, long-term increase in ambient noise levels. However, this impact is expected to be low and not significant, given the projected traffic volumes and the nature of the surrounding environment. Noise levels will remain within acceptable thresholds, and the Mobility Management Plan will support strategies to reduce reliance on private vehicles, thereby helping to limit any potential increase in noise and vibration over time. |
| **Material Assets- Waste and Utilities** | Excess material excavated during construction works will be transported by road for disposal in approved locations as provided for in this EIAR. Movements of construction traffic will be managed in accordance with the Construction Traffic Management Plan. |
| **Conclusions** | |
| With the implementation of all mitigation measures detailed in the respective chapters, there will be no negative residual effects upon the material assets-traffic and transport. | |

*Table 16-12. Material Assets- Waste and Utilities*

| **Material Assets-Waste and Utilities** |
|---|
| **Summary** |

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| | |
|---|---|
| Chapter 14 (Material Assets-Waste and Utilities) of the EIAR provides an assessment of the potential effects of the Proposed Development on material assets including traffic, built services and infrastructure. | |
| **Interactions** | |
| **Population and Human Health** | In the absence of mitigation, the improper removal, handling and storage of waste could negatively impact on the health of construction workers. Additionally, extended disruptions to power, telecommunications, water supply or sewerage systems affecting existing properties in the area could adversely impact the health and wellbeing of the local population. However, the comprehensive mitigation measures, which will be implemented, detailed in chapter 14 (Material Assets-Waste and Utilities) of this EIAR, including strict waste management protocols, adherence to relevant Codes of Practice, and close coordination with utility providers, are designed to prevent or minimise these risks. Consequently, chapter 4 (Population and Human Health) of this EIAR concludes that no long-term, adverse effects are likely to impact on population and human health as a result of the Proposed Development. |
| **Land and Soils** | Improper handling and segregation of hazardous or contaminated wastes could lead to the contamination of soil and stones excavated from the site. It is also anticipated that some excavated soil and subsoil, including soil contaminated with petroleum hydrocarbons and solvents, will require removal offsite. Additionally, there is a requirement to import aggregates during the construction phase of the Proposed Development. Potential effects on land and soil are addressed in chapter 6 (Land and Soils) of this EIAR. |
| **Hydrology and Hydrogeology** | All connections to the public water network (water supply or foul sewer), abstractions from water supply and discharges to the foul sewer during the construction and operational phases will be under consent from Uisce Éireann. Potential effects on water and hydrology are addressed in chapter 7 (Hydrology and Hydrogeology) of this EIAR. |
| **Climate** | The Proposed Development has been designed in accordance with all relevant building design standards. Sustainable power and heat sources have been included as part of the building design to reduce reliance on imported fossil fuels and reduce GHG emissions. |
| **Material Assets-Traffic and Transport** | The Proposed Development will require the removal of excavated soil and transportation to appropriate waste facilities during the construction phase. It is anticipated that all excavated materials will require removal offsite in accordance with all statutory legislation. This has the potential to negatively affect the surrounding road network. The removal of all soil from the site will be undertaken in accordance with all applicable statutory legislation and will be the responsibility of the main contractor. Potential effects on traffic are addressed in chapter 13 (Material Assets-Traffic and Transport) of this EIAR. |
| **Conclusions** | |

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With the implementation of all mitigation measures detailed in the respective chapters, there will be no negative residual effects upon the material assets-waste and utilities.

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# 17 MITIGATION AND MONITORING MEASURES

## 17.1 Introduction

This EIAR has assessed the potential impacts and resulting effects on the receiving environment that may occur as a result of the Proposed Development.

The Proposed Development will be operated in a manner that will ensure that the potential effects on the receiving environment are avoided where possible. In cases where effects or potential effects have been identified, mitigation measures have been proposed to reduce the significance of particular effects. These recommended mitigation measures are contained within each chapter exploring specific environmental aspects.

This chapter of the EIAR collates and summarises the mitigation commitments made in Chapter 4 to Chapter 13.

## 17.2 Competency of Authors

This chapter was prepared by Aisling Jones, an Environmental Consultant at DNV. Aisling has a Bachelor of Civil Law degree from University College Dublin and a Master of Science degree in Environmental and Climate Law also from University College Dublin.

This chapter has been reviewed by Michelle Gaffney Senior EIA Consultant with DNV, with over 4 years' experience in environmental consultancy. Michelle holds a B.A (Hons) in Earth Science from Trinity College Dublin and is currently advancing expertise through an MSc in Environmental Sustainability at University College Dublin. Michelle has been involved in the technical input into a range of Environmental Impact Assessment Report Chapters and has been involved in the project management and delivery of a range of EIARs of a similar scale and nature to the Proposed Development.

This chapter has been approved by Catherine Keogan, Technical Director and EIA Lead at DNV. Catherine is an environmental consultant with 37 years' experience in consultancy, specialising in EIAs for large-scale residential, commercial developments, pharmaceutical, BESS and solar projects working closely with a range of developers, planning consultants and architects within the public and private sector. Catherine has a B.Sc. (Hons) in Analytical Science and a Post Graduate Diploma in Renewable Energy Technology Systems.

## 17.3 Summary of Mitigation Measures

### 17.3.1 Population and Human Health

#### *17.3.1.1 Construction Phase*

##### 17.3.1.1.1 Mitigation

No specific mitigation measures are required during the construction phase of the Proposed Development in relation to population and human health, given the lack of direct, adverse

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effects resulting from the Proposed Development. The potential impacts on the human environment relate to other environmental aspects such as air quality, noise and vibration, water quality and traffic and where required, the related mitigation measures are dealt with in the corresponding chapters of this EIAR

#### 17.3.1.1.2 Monitoring

In relation to the effects of the Proposed Development on population and human health during the construction phase, it is considered that the monitoring measures outlined throughout this EIAR in regard to the other environmental topics such as water, air quality and climate and noise address monitoring requirements.

### *17.3.1.2 Operational Phase*

#### 17.3.1.2.1 Mitigation

No specific mitigation measures are required during the operational phase of the Proposed Development in relation to population and human health, given the lack of direct, adverse effects resulting from the Proposed Development. However, mitigation measures in relation to air quality, climate, water quality, noise, traffic, and waste are identified in their respective chapters in this EIAR.

#### 17.3.1.2.2 Monitoring

In relation to the effects of the Proposed Development on population and human health during the operational phase, it is considered that the monitoring measures outlined throughout this EIAR in regard to the other environmental topics such as water, air quality and climate and noise address monitoring requirements.

## 17.3.2 Biodiversity

The mitigation measures outlined hereunder are based on established best practice guidelines and will provide effective screening of the Proposed Development for likely effects to habitats, species and associated key ecological receptors generated during the construction phase and operational phases of the Proposed Development. Mitigation measures and environmental safeguards outlined for the construction phase are taken from established best practice guidelines that have been successfully implemented for a wide range of project-level infrastructural developments. These recommended mitigation measures have undergone extensive and rigorous monitoring for their effectiveness at development sites where they have previously been applied to ensure beyond reasonable scientific doubt that there will be no adverse effect stemming from the Proposed Development.

The best practice guidance that has informed the mitigation measures herein and the proposed environmental safeguards that should be adhered to throughout the construction and operational phases of the Proposed Development (as recommended by the EA / SEPA / EHS) include,

- PPG 1: Understanding your environmental responsibilities - good environmental practices
- GPP 2: Above ground oil storage tanks
- PPG 3: Use and design of oil separators in surface water drainage systems

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- GPP 4: Treatment and disposal of wastewater where there is no connection to the public foul sewer
- GPP 5: Works and maintenance in or near water
- PPG 6: Working at construction and demolition sites
- PPG 7: Safe storage - The safe operation of refuelling facilities
- GPP 8: Safe storage and disposal of used oils
- GPP 8: Safe storage and disposal of used oils
- GPP 8: Safe storage and disposal of used oils
- GPP 19: Vehicles: Service and Repair
- GPP 21: Pollution incident response planning
- GPP 22: Dealing with spills
- GPP 26 Safe storage - drums and intermediate bulk containers
- PPG 27: Installation, decommissioning and removal of underground storage tanks
- CIRIA Environmental Good Practice on Site.

#### *17.3.2.1 Construction Phase*

##### 17.3.2.1.1 Mitigation

**Surface Water Quality**

The potential for the construction phase of the Proposed Development to result in the discharge of polluted surface water to the River Boyne has been identified as a potential impact pathway that could result in adverse effects to the River Boyne and Estuaries European Sites.

In order to minimise the generation of polluted waters in the first instance and avoid the discharge of polluted surface water to the River Boyne the following measures will be implemented:

- The main contractor will appoint a suitably qualified person to oversee the implementation of measures for the prevention of pollution to the receiving surface water environment.
- A surface water catch-trenches will be provided along the northern, western and eastern boundary of the construction footprint prior to stripping topsoil. The surface water catch-trenches will have a settlement pond silt trap at the end of each trench with an overflow. The surface water catch-trenches will be discharged via a buffered outfall overland to the north of the site. Straw bales will be placed within the catch-trenches at strategic locations and at the outfall of the settlement ponds to the overflow. These measures will be implemented and maintained during the construction phase to prevent surface water runoff from discharging directly into the local water course. An indicative layout for the proposed surface water catch-trenches is set out in Appendix A of the CEMP for the Proposed Development, provided under separate cover with the planning application documentation.
- A clean water diversion drain will be provided for in advance of the stripping of topsoil. The clean water diversion drain will be provided to the south and up-gradient of the construction footprint. This will divert surface water runoff overland from areas to the south and upgradient of the construction footprint away from this footprint, thereby minimising the volume of runoff occurring within this footprint.

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- A silt fence will be installed in accordance with CIRIA guidelines along the western, northern and eastern boundary of the construction footprint. The provision of the silt fence, particularly along the northern and eastern boundary of the construction footprint will eliminate the potential for the untreated release of silt-laden surface water from the Proposed Development site north towards the River Boyne or east towards the culverted section of the Sheephouse Stream.
- Settlement ponds/silt traps as outlined above will be provided to prevent silt runoff into the existing ditches/watercourses during the drainage works.
- Regular testing of surface water discharges will be undertaken at the outfall from the subject lands. The location will be agreed between the project ecologist and the site foreman at the commencement of works. Trigger levels for halting works and re-examining protection measures will be: pH >9.0 or pH <6.0; and/or suspended solids >25 mg/l. These trigger levels are based on those outlined within 'Guidelines on Protection of Fisheries During Works in and Adjacent to Waters (IFI, 2016)'.
- In the unlikely and unexpected event that silt control measures are noted to be failing or not working adequately, works will cease in the relevant area. The project ecologist will review and agree alternative pollution control measures, such as deepening or redirecting trenches as appropriate, before works may recommence.
- All fuels and chemicals will be bunded, and where applicable, stored within double skinned tanks / containers with the capacity to hold 110% of the volume of chemicals and fuels contents. Bunds will be located on flat ground a minimum distance of 50m from any watercourse or other water conducting features, including the cut off trenches. This will prevent the discharge of such substances to ground and eliminate the potential for groundwater base flow contamination with such substances.
- Any re-fuelling and maintenance of equipment will be done at designated bunded areas with full attendance of plant operative(s) within contained areas at least 50m from any surface water drain to be provided on site as part of the construction phase drainage management. Re-fuelling in such areas will prevent the discharge of such substances to ground and eliminate the potential for groundwater base flow contamination with such substances.
- All existing services will be located using service records, GPR surveys and slit trenches to ensure that their position accurately identified before excavation works commence.
- Spill kits will contain 10 hr terrestrial oil booms (80mm diameter x 1000mm) and a plastic sheet, upon which contaminated soil can be placed to prevent leaching to ground water.
- A designated wash down area within the Contractor's compound will be used for cleaning of any equipment or plant, with the safe disposal of any contaminated water
- Temporary traffic management will be implemented as appropriate during the construction of the outfalls on Rathmullan/River Road.

**Noise and Vibration Emissions**

Whilst this NIS found no functional noise impact pathway connecting the Proposed Development site to European Sites, a series of best practices will be implemented to control noise emissions during the construction phase. The scheme contractor will be obliged to give due regard to BS5228, which offers detailed guidance on the control of noise from construction

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activities. In particular, it is proposed that various practices be adopted during construction, including:

- Limiting the hours during which site activities likely to create high levels of noise are permitted.
- Establishing channels of communication between the contractor/developer, local authority and residents.
- Appointing a site representative responsible for matters relating to noise.
- Ensuring all site access roads are kept as even as possible so as to mitigate the potential for vibration from lorries.
- Monitoring typical levels of noise during critical periods at sensitive locations.

Furthermore, it is necessary for a variety of practicable noise control measures to be employed as follows:

- Selection of plant with low inherent potential for generation of noise.
- Siting of noisy plant as far away from sensitive properties as permitted by site constraints.

**Dust and Airborne Pollutants**

The construction phase has been identified as having the potential to generate soiling and dust within a potential 100m buffer zone surrounding the construction footprint. This includes the area of oak-ash-hazel woodland to the north of the construction footprint, which is located within the boundary of the River Boyne and River Blackwater SAC. In order to prevent soiling and adverse effects to vegetation the main contractor will be required to demonstrate that both nuisance dust and fine particle emissions from the site are adequately controlled and are within acceptable limits through use of the prevention and mitigation measures set out herein.

Dust and fine particle generation from construction and demolition activities on the site can be substantially reduced through carefully selected mitigation techniques and effective management. Once particles are airborne it is very difficult to prevent them from dispersing into the surrounding area. The most effective technique is to control dust at source and prevent it from becoming air borne, since suppression is virtually impossible once it has become air borne.

The following are techniques and methods which are widely used currently throughout the construction industry and which shall be used in the construction of the Proposed Development, where appropriate:

- The roads around the site are all surfaced and no dust is anticipated arising from unsealed surfaces.
- Vehicles travelling on any unsurfaced site roads shall have their speed restricted to 20 kph.
- A regime of ‘wet’ road sweeping will be set up to ensure the roads around the immediate site areas clean and free from dirt / dust arising from the site, as is reasonably practicable. This cleaning will be carried out by approved mechanical sweepers.
- Footpaths immediately around the site will be cleaned by hand regularly, with damping as necessary.

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- High level walkways and surfaces such as scaffolding shall be cleaned regularly using safe 'wet' methods, as opposed to dry methods.
- Vehicle waiting areas or hard standings will be regularly inspected and kept clean by brushing or vacuum sweeping and will be regularly sprayed to keep moist, if necessary.
- Vehicle and wheel washing facilities will be provided at site exit(s) where practicable. If necessary, vehicles shall be washed down before exiting the site.
- Netting will be provided to enclose scaffolding in order to mitigate escape of air borne dust from the existing and new buildings.
- Vehicles and equipment shall not emit black smoke from exhaust system, except during ignition at start up.
- Servicing of vehicles and plant shall be carried out regularly, rather than just following breakdowns.
- Internal combustion plant shall not be left running unnecessarily.
- Exhaust direction and heights shall be such as not to disturb dust on the ground and to ensure adequate local dispersal of emissions.
- Where possible fixed plant such as generators shall be located away from residential areas.
- The number of handling operations for materials will be kept to a minimum in order to ensure that dusty material is not moved or handled unnecessarily.
- The transport of dusty materials and aggregates shall be carried out using covered / sheeted lorries.
- Material handling areas shall be clean, tidy and free from dust.
- Vehicle loading shall be dampened down and drop heights for material to be kept to a minimum.
- Drop heights for chutes / skips shall be kept to a minimum.
- Dust dispersal over the site boundary shall be minimised using static sprinklers or other watering methods as necessary.
- Stockpiles of materials shall be kept to a minimum and if necessary, they shall be kept away from sensitive receptors such as residential areas etc.
- Stockpiles were necessary, shall be sheeted or watered down.
- Methods and equipment shall be in place for immediate clean-up of spillages of dusty material.
- No burning of materials will be permitted on site.
- Earthworks excavations shall be kept damp where necessary and where reasonably practicable.
- Cutting on site shall be avoided where possible by using pre-fabrication methods
- Equipment and techniques for cutting / grinding / drilling / sawing / sanding etc, which minimise dust emissions and which have the best available dust suppression measures, shall be employed.
- Where scabbling is to be employed, tools shall be fitted with dust bags, residual dust shall be vacuumed up rather than swept away, and areas to be scabbled shall be screened off.
- Wet processes shall be used to clean building facades if possible. If dry grit blasting is unavoidable then ensure areas of work are sealed off and dust extraction systems used.
- Where possible pre-mixed plasters and masonry compounds shall be used to minimise dust arising from onsite mixing.

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- Prior to commencement, the main contractor shall identify the construction operations which are likely to generate dust and to draw up action plans to minimise emissions, utilising the methods highlighted above. Furthermore, the main contractor shall prepare environmental risk assessments for all dust generating processes, which are envisaged.
- The main contractor shall allocate suitably qualified personnel to be responsible for ensuring the generation of dust is minimised and effectively controlled.
- The name and contact details of a person to contact regarding air quality and dust issues shall be displayed on the site boundary, this notice board shall also include head/regional office contact details.

The contractor will be obliged to implement the mitigation measures outlined above in respect of dust/dirt control.

**Considerations for Key Ecological Receptors**

All hedgerows and immature woodland marked for retention will be fenced off at the outset of works and for the duration of construction to avoid damage to the trunk, branches or root systems of the trees. Temporary fencing will be erected at a sufficient distance from the tree so as to enclose the Root Protection Area (RPA) of the tree (National Roads Authority, 2005-2011). In general, the RPA covers an area equivalent to a circle with a radius 12 times the stem diameter (measured at 1.5m above ground level for single stemmed trees). Where fencing is not feasible due to insufficient space, protection for the tree/hedgerow will be afforded by wrapping hessian sacking (or suitable equivalent) around the trunk of the tree and strapping stout buffer timbers around it. It will still be necessary to ensure that the area within the RPA is not used for vehicle parking or the storage of materials (including oils and chemicals). Soil will not be placed within the Root Protection Area of trees or within 5m of hedgerows; The woodland will not be lit during the construction or operational phases of the development; and the construction compound will be located a minimum of 50m from watercourses.

In order to minimise the potential for disturbance to the woodland habitat to the north of the Proposed Development site the landscape masterplan has been designed to include the provision new native woodland habitat to the south of the existing area of woodland. This woodland will be contiguous with the existing woodland to the north of the development. A 1.6m high temporary stock proof fence will be provided along the southern boundary of the new area woodland until it has developed. The 10m strip fringing this woodland will be treated as a dense woodland boundary with an abundance of *Prunus spinosa* and *Crataegus mongyna*. This will provide protection for the woodland and minimise the potential to for disturbance.

#### 17.3.2.1.2 Monitoring

The purpose of construction-phase monitoring is to,

- Ensure compliance with mitigation measures and legal protections;
- Prevent disturbance or harm to protected species;
- Confirm implementation of avoidance zones, buffers, and habitat protection measures.

**Badger (*Meles meles*)**

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- Sett Activity Checks
    - Conduct pre-commencement sett status surveys within 150m of the site boundary
    - Potentially use trail cameras as appropriate.
    - Buffer Zones - Maintain 30m no-disturbance buffers around active setts.
- Derogation Licensing: Where disturbance is unavoidable, apply for an NPWS derogation licence. Works to be supervised by a licensed ecologist.
- Monitoring frequency should include,
    - one pre-commencement survey
    - monthly walkovers near known sett locations during construction.

**Otter *(Lutra lutra)***

- Pre-commencement Survey to confirm locations / evidence of
    - holts
    - couches
    - sprainting sites
    - trails within 150m of site watercourses.
- Exclusion Zones
    - Apply a 15 m buffer around active holts
    - No construction works within this buffer without licence and supervision.
- Pollution control monitoring on a weekly basis via visual inspection of sediment control measures and drainage mitigation near aquatic habitats.
- No night-time works.

**Protected Birds**

- No clearance vegetation or clearance of nesting habitats between 1st March and 31st August unless confirmed inactive by an ecologist.
- Prior to any clearance works, nesting bird checks will be carried out by a qualified ecologist.
- Acoustic screens or buffers to be implemented near active nests of sensitive species (e.g., Yellowhammer, Meadow Pipit, Kingfisher).
- Ecological Clerk of Works (ECoW) to supervise all clearance and earthworks in areas supporting bird nesting or foraging habitat.

**Habitats**

- Weekly site walkovers to inspect condition of retained hedgerows, treelines, and aquatic buffers.
- Biweekly water quality spot checks (turbidity, sedimentation) nearby drainage lines and / or surface water run-off channels during active construction works.

**Construction Phase Reporting**

- Monthly ecological monitoring reports submitted to the Planning Authority.
- Immediate reporting of any breach of buffer zones or wildlife incidents to NPWS and the ECoW.

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#### *17.3.2.2 Operational Phase*

##### 17.3.2.2.1 Mitigation

Measures have been incorporated into the design of the project to ensure that surface water discharging from the project site is clean and does not have the potential to result in pollution to the estuary at the surface water outfall location. These design measures included the provision of onsite attenuation so that all surface water draining from the project site is restricted to green field runoff rates. This will be achieved by providing attenuation storage for the project, as described in the Biodiversity chapter.

- Hydrobrakes will be installed at each of the attenuation tanks provided for as part of the development.
- A full hydrocarbon and silt interceptor will be provided at the outlet of the attenuation pond so that all water being directed to the rising main first passes through the interceptor prior to its release from the site.
- A range of SuDS measures will be implemented that will further treat and manage surface water generated on site during the operation phase.

The provision of these design features will ensure that surface water emitted from the Proposed Development site during the operation phase is adequately treated and will eliminate any risk of polluted surface water being discharged from the Proposed Development site during operation.

##### 17.3.2.2.2 Monitoring

Operational-phase monitoring aims to,

- Assess the long-term use of retained and enhanced habitats by target species
- Evaluate the success of mitigation and habitat enhancement measures
- Guide adaptive management interventions as necessary.

**Badger**

- Determine changes in sett use and foraging activity within the development area.
- Monitoring Locations: Focus on areas adjacent to roads, greenways, and retained habitat corridors.
- Reporting Frequency: Annual surveys for five years post-construction.

**Otter**

- Biannual Survey: Spring and autumn surveys of otter holts, sprainting sites, and movement corridors in adjacent watercourses.
- Habitat Use Monitoring: Assess use of riparian corridors, underpasses or bridges (if installed), and potential new holts.
- Reporting Frequency: Every six months for five years post-construction.

**Protected Birds**

- Breeding Bird Survey - Conducted annually in spring (March–June) for at least three years post-construction.
- Wintering Bird Survey - Carried out in winter (October–February) to detect presence and abundance of wintering species.

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- Nest Box Monitoring - Success and occupancy rates of installed nest boxes (e.g., for barn owl or passerines) recorded annually.

**Habitats**

- Evaluate retained and enhanced habitats, including hedgerows, oak-ash-hazel woodland, watercourses, riparian zones, and grasslands.
- Targeted inspections for non-native invasive species encroachment and management needs
- Track the success of native planting schemes, woodland and hedgerow functioning, and grassland diversity.

**Operational Phase Reporting**

- Annual Biodiversity Monitoring Reports summarising ecological trends, species presence, habitat condition, and recommendations for further management.
- Submitted to the Planning Authority and made available to NPWS where relevant.

### 17.3.3 Land and Soils

#### *17.3.3.1 Construction Phase*

##### 17.3.3.1.1 Mitigation

During the construction phase, all works will be undertaken in accordance with the Construction Waste Management Plan (CWMP) / Construction Environmental Management Plan (CEMP) (WM, 2025b and WM, 2025c included in Appendix 6-1) and the Resource and Waste Management Plan (RWMP) (DNV, 2025). Following appointment, the contractor will be required to further develop the CWMP, CEMP and RWMP to provide detailed construction phasing and methods to manage and prevent any potential emissions to ground and surface water with regard to the relevant industry standards (e.g., Guidance for Consultants and Contractors, CIRIA-C532', CIRIA, 2001). The CWMP, CEMP and RWMP will be implemented for the duration of the construction phase, covering construction and waste management activities that will take place during the construction phase of the Proposed Development.

**Import of Aggregates and Materials**

Contract and procurement procedures will ensure that all imported aggregates and materials required for the construction phase of the Proposed Development will be sourced from reputable suppliers operating in a sustainable manner and in accordance with industry conformity/compliance standards and statutory obligations. The importation of aggregates and materials will be subject to management and control procedures which will include testing for contaminants, invasive species and other anthropogenic inclusions and assessment of the suitability for use in accordance with engineering and environmental specifications for the Proposed Development. Therefore, any unsuitable material will be identified prior to unloading / placement onsite.

**Airborne Dust Generation**

Dust and fine particle generation from construction and demolition activities on the site can be substantially reduced through the selection of adequate mitigation techniques and effective

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management. The most effective technique is to control dust at source and prevent it from becoming air borne by implementing the following mitigation measures:

- Excavated soils will be carefully managed and maintained in order to minimise potential effect on soil quality and soil structure.
- Handling of soils and materials will be undertaken in accordance with documented procedures outlined in the CWMP, CEMP and RWMP that will be set out in order to protect ground and minimise airborne dust.
- The normal measures required to prevent airborne dust emissions and associated nuisance arising from site work will be in place including measures to prevent uncovered soil drying out leading to wind pick up of dust and mud being spread onto the local road network and adjoining properties. This may require additional wetting at the point of dust release, dampening down during dry weather and wheel cleaning for any vehicles leaving the site.
- Vehicles travelling on any unsurfaced site roads shall have their speed restricted to 20 kph.
- Footpaths immediately around the site will be cleaned by hand regularly, with damping as necessary.
- High level walkways and surfaces such as scaffolding shall be cleaned regularly using safe ‘wet’ methods, as opposed to dry methods.
- Vehicle waiting areas or hard standings will be regularly inspected and kept clean by brushing or vacuum sweeping and will be regularly sprayed to keep moist, if necessary.
- Dust dispersal over the site boundary shall be minimised using static sprinklers or other watering methods as necessary.
- Equipment and techniques for cutting / grinding / drilling / sawing / sanding etc, which minimise dust emissions and which have the best available dust suppression measures, shall be employed
- Prior to commencement, the main contractor shall identify the construction operations which are likely to generate dust and to draw up action plans to minimise emissions, utilising the methods highlighted above. Furthermore, the main contractor shall prepare environmental risk assessments for all dust generating processes, which are envisaged.
- The main contractor shall allocate suitably qualified personnel to be responsible for ensuring the generation of dust is minimised and effectively controlled.
- The name and contact details of a person to contact regarding air quality and dust issues shall be displayed on the site boundary, this notice board shall also include head/regional office contact details.
- Where asbestos containing materials (ACMs) are encountered during demolition works, these will be managed in accordance with the Safety, Health and Welfare at Work (Exposure to Asbestos) Regulations 2006–2010 and the Construction Regulations 2013, including the use of licensed asbestos contractors, appropriate risk assessments, and safe removal and disposal procedures as outlined by the Health and Safety Authority.

Potential effects and avoidance and mitigation measures associated with generation of dust are addressed in Chapter 8 of this EIAR.

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**Reuse of Soil**

Soil and subsoil materials to be reused within the Proposed Development (i.e. for engineering fill and landscaping) will be subject to assessment of suitability for use in accordance with engineering and environmental specification for the Proposed Development. This will include:

- Defining the criteria by which the suitability of the soils for reuse will be assessed (e.g., analytical parameters and limits), the engineering requirements such as geotechnical parameters for the material to be used within the works.
- Delineation of areas where excavated soil is intended for disposal offsite as waste, and where it is intended for reuse on site.
- Identification and recording of the location from where the soil will be excavated and its proposed reuse location and function.
- Engineering assessment to confirm its suitability for reuse.
- Any proposed treatment or processing required to enable its reuse, as well as any associated treatment permits, or licences required.
- All topsoil stripping associated with the Proposed Development will be monitored by a suitably qualified licensed archaeologist making sure to include any non-natural subsoil deposits to ensure that any potential archaeological features are exposed in the works. The licensed archaeologist onsite will be responsible, on behalf of the developer, for the identification and appropriate treatment (e.g. excavation and recording) of all archaeological remains encountered. The results of all excavations, including site evaluation and monitoring, will be compiled into a fully illustrated report.

**Management and Control of Soils and Stockpiles**

Segregation and storage of soils for re-use onsite or removal offsite and waste for disposal offsite will be segregated and temporarily stored onsite pending removal or for reuse onsite in accordance with the CEMP (WM, 2025c) which will be updated by the main contractor in advance of construction works commencing.

Where possible, stockpiling of soil and stone onsite will be avoided. However, in the event that stockpiling is required, stockpiled materials, pending reuse onsite, will be located away from the location of any sensitive receptors (i.e., drains / watercourses).

When a stockpile has been sampled for re-use or waste classification purposes, it will be considered to be complete, and no more soil will be added to that stockpile prior to removal. An excavation/stockpile register will be maintained on-site.

The reuse of suitable excavated soil and subsoil for the Proposed Development (i.e., landscaping or engineering) will be undertaken in accordance with the engineered design and landscape plan for the Proposed Development.

Stockpiling of excavated material (i.e., soils and subsoils) should be avoided. However, where required (i.e., awaiting reuse onsite or removal offsite), it will be appropriately managed onsite during the construction phase of the Proposed Development in accordance with the measures outlined in the CEMP (WM, 2025c). To minimise the overall effect on soils arising during the construction works, the following mitigation measures will be adhered to.

- A suitable temporary storage area will be identified and designated.
- All stockpiles will be assigned a stockpile number.

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- Material identified for reuse on site, off site and waste materials will be individually segregated; and all segregation, storage & stockpiling locations will be clearly delineated on the site drawings.
- Soil stockpiles will be covered to prevent run-off from the stockpiled material and/or the generation of dust.
- Material identified for reuse on site, off site and waste materials will be individually segregated.
- Topsoil should not be stored in piles of greater than two metres in height as the soil matrix (internal structure) can be damaged beyond repair. It should also be kept as dry as possible and used as soon as possible to reduce any deterioration through lengthy storage and excess moving around the site.
- Any waste that will be temporarily stored / stockpiled will be stored on impermeable surface high-grade polythene sheeting, hardstand areas or skips to prevent cross-contamination of the soil below or cross contamination with soil.
- Regular watering will take place to ensure the moisture content is high enough to increase the stability of the soil and thus suppress dust.
- Stockpiles of materials shall be kept to a minimum and if necessary, they shall be kept away from sensitive receptors such as residential areas etc.
- Stockpiles where necessary, shall be sheeted or watered down.
- Earthworks excavations shall be kept damp where necessary and where reasonably practicable.

Any waste generated from construction activities, including concrete, asphalt and soil stockpiles, will be managed in accordance with the procedures which will be outlined in the CWMP (WM, 2025b) and RWMP (DNV, 2025) and the project specific RWMP and will be stored onsite in such a manner as to:

- Prevent environmental pollution (bunded and/or covered storage, minimise noise generation and implement dust/odour control measures, as may be required).
- Maximise waste segregation to minimise potential cross contamination of waste streams and facilitate subsequent reuse, recycling and recovery.
- Prevent hazards to site workers and the general public during the construction phase (largely noise, vibration and dust).

Prior to site works commencing, the CWMP (WM, 2025b) and RWMP (DNV, 2025) will be updated to reflect specific measures to minimise waste generation and resource consumption, including providing details of proposed waste contractors and destinations for each waste stream.

**Soil Structure**

The extent of the required work area and the bulk excavation at the site will be minimised where appropriate to prevent unnecessary excavation of soil and tracking over soil and subsoil outside of the excavation work areas as a result of compaction and rutting from construction traffic.

Soil including topsoil and subsoil will be segregated and stored appropriately to prevent deterioration of soil structure and quality to ensure the material will be suitable for re-use onsite.

**Export of Resource (Soil and Subsoil) and Waste**

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All surplus materials and any waste will be removed offsite in accordance with the requirements outlined in the CWMP (WM, 2025b), CEMP (WM, 2025c) and RWMP (DNV, 2025) and will be managed in accordance with all legal obligations.

It will be the contractor's responsibility to either; obtain a waste collection permit or, to engage specialist waste service contractors who will possess the requisite authorisations for the collection and movement of waste offsite.

Where appropriate, excavated soil and material intended for recovery or disposal offsite will require appropriate waste classification in order to select an appropriate receiving facility. Assessment of the excavated material will be carried out with due regard to the following guidance and legislation:

- Environmental Protection Agency document entitled Waste Classification; List of waste and determining if waste is Hazardous or Non-Hazardous.
- EU Council Decision 2003/33/EC establishing criteria and procedures for the acceptance of waste at landfills pursuant to Article 16 and Annex II of Directive 1999/31/EC (2002).
- Environmental Protection Agency documented entitled Guidance on Waste Acceptance Criteria at Authorised Soil Recovery Facilities.
- Environment Agency, 2018. Technical Guidance WM3: Guidance on the classification and assessment of waste.
- Any other guidance or legislation that might be applicable or relevant at the time of disposal.

Additionally, it will be the contractor's responsibility involved in the refurbishment/demolition works (i.e., southeastern portion of the site) to identify the asbestos materials and to ensure that appropriate remedial measures are introduced prior to any structural alterations, refurbishment or demolition works commencing. All the asbestos removal works should be carried out by a competent asbestos removal contractor in accordance with Asbestos at Work Regulations 2006 to 2010. Statutory notification requirements of 14 days are required under the provisions of the Asbestos Regulations for certain works involving asbestos. The contractor appointed for removal works is responsible for deciding if a 14 day notification is required and for drawing up a plan of work for any removal works. Further details are included in Chapter 14 of this EIAR.

The re-use of soil and rock offsite will be undertaken in accordance with all statutory requirements and obligations including where appropriate re-use as by-product in accordance with Article 27 of the European Communities (Waste Directive) Regulations 2011 (SI No. 126 of 2011) as amended. Any surplus material not suitable for re-use as a by-product and other waste materials arising from the construction phase will be removed offsite by an authorised contractor and sent to the appropriately authorised (licensed/permitted) receiving waste facilities. As only authorised facilities will be used, the potential effects at any authorised receiving facility sites will have been adequately assessed and mitigated as part of the statutory consent procedures.

Any waste soils will be transported under a valid waste collection permit issued under the Waste Management (Collection Permit) Regulations 2007, as amended and will be delivered to an appropriately authorised waste management facility. Where hazardous waste requires removal offsite, the contractor will ensure compliance with the Waste Management (Hazardous Waste) Regulations 1998 (as amended very frequently) and the European

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Communities (Shipments of Hazardous Waste exclusively within Ireland) Regulations 2011, unless it is exempted from compliance with those Regulations under article 35 of the Collection Permit Regulations. Hazardous waste will only be given to a collector or haulier with a collection permit under the Waste Collection Permit Regulations and the collector or haulier must bring the waste to a licensed hazardous waste management facility and ensure that it is shipped within Ireland in accordance with the stringent requirements of the European Communities (Shipments of Hazardous Waste exclusively within Ireland) Regulations 2011 and/or exported from Ireland in accordance with the Waste Management (Shipments of Waste) Regulations 2007 (as amended) and Council Regulation (EC) No.1013/2006 on shipments of wastes, as amended (the "TFS Regulations).

Materials and waste will be documented prior to leaving the site. All information will be entered into a waste management register kept on the site.

Vehicles transporting material with potential for dust emissions to an offsite location shall be enclosed or covered with a tarpaulin at all times to restrict the escape of dust.

Public roads outside the site will be regularly inspected for cleanliness, at a minimum on a daily basis, and cleaned as necessary. Where required, trucks entering / leaving the site will pass through a wheel washing system. The wheels of all lorries will be cleaned as required prior to leaving the site to prevent the generation of dust or cause the build-up of aggregates and fine material in the public domain. The correct use and management of the wheel washing system (where required) will be undertaken by the main contractor to ensure that there is no harm or effect to the receiving water environment.

**Concrete Works**

The use of cementitious grout used during the construction phase of the Proposed Development will avoid any contamination of the receiving hydrogeological environment through the use of appropriate design and methods implemented by the appointed contractor and in accordance with the CEMP (WM, 2025b), and relevant industry standards to prevent impact on groundwater and surface water quality such as the use of water compatible grout.

The following are mitigation measures that need to be adhered to when using concrete for the Proposed Development:

- All ready-mixed concrete will be delivered to the site by truck.
- Concrete batching will take place offsite.
- Wash down and wash out of concrete trucks will take place into a container located within a controlled bunded area which will then be emptied into a skip for appropriate compliant removal offsite in accordance with all relevant waste management legislation.
- Any excess concrete is not to be disposed of onsite.
- Pouring of cement-based materials for works will only be carried out in dry conditions and pumped concrete will be monitored to ensure there is no accidental discharge.
- A suitable risk assessment for wet concreting shall be completed prior to works being carried out. Pumped concrete will be monitored to ensure there is no accidental discharge.

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- Pouring of concrete will not be permitted within 50m of any watercourse during inclement weather.

**Handling of Fuels, Chemicals and Materials**

Fuelling and lubrication of equipment will be carried out in accordance with the procedures outlined in the CEMP (WM, 2025b), in a designated area of the site (i.e., bunded areas) away from any watercourses and drains (where not possible to carry out such activities offsite) with full attendance of plant operatives.

Fuel will not be stored onsite for the duration of the construction phase. Fuel will only be brought to site via mobile fuel bowser. Any other oils or hydraulic oils stored onsite will be stored in designated areas in suitable tanks and containers. These areas will be bunded and located away from surface water drainage and features (i.e., bunded compounds at the Contractor's compound on flat ground or at a location at least 50m from any watercourse or other water conducting features, including the cut off trenches).

- Bunds will have regard to Environmental Protection Agency Guidelines 'Amendment to IPC Guidance Note on Storage and Transfer of Materials for Scheduled Activities' (EPA, 2013). All tank and drum storage areas will, at a minimum, be bunded to a volume not less than the greater of the following:
    - 110% of the capacity of the largest tank or drum within the bunded area; or
    - 25% of the total volume of substance that could be stored within the bunded area.
- Strict supervision of contractors will be adhered to in order to ensure that all plant and equipment utilised onsite is in good working condition.
- Any equipment not meeting the required standard will not be permitted for use within the Proposed Development site.
- Only emergency breakdown maintenance will be carried out onsite.
- Drip trays and spill kits will be available onsite to ensure that any spills from vehicles are contained and removed offsite.
- Spill kits will be made available and kept onsite at all times and identified with signage for use in the event of an environmental spill or leak.
- A spill kit will be kept in close proximity to the fuel storage area for use in the event of any incident during refuelling or maintenance works.
- Heavy machinery used on the site will also be equipped with its own spill kit.
- Method statements for dealing with accidental spillages will be provided to the Contractor for review by the Employer's Representative.
- There may also be the requirement for use of portable generators or similar fuel containing equipment during the construction phase of the Proposed Development, which will be placed on suitable drip trays. Regular monitoring of drip tray content will be undertaken to ensure sufficient capacity is maintained at all times.
- Suitable bunded areas will be installed for oil and petrol storage tanks.
- Designated fuel filling points will be put in place with appropriate oil and petrol interceptors to provide protection from accidental spills.
- Spill kits will be provided by the main contractor to cater for any other spills.
- Where contractors are required to refuel vehicles, this will only be carried out at the designated refuelling location within the site storage compound, which must employ

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pollution control mechanisms to prevent escape of fluids to the river. No refuelling is permitted on site (i.e. within a river or adjacent to a river due to risk of spillage).

- The local authority will be informed immediately of any spillage or pollution incident that may occur on-site during the construction phase.

**Emergency Procedures**

Emergency procedures will be developed by the Main Contractor in advance of works commencing and spillage kits will be available onsite including in vehicles operating onsite. Remedial action will be immediately implemented to address any potential impacts in accordance with industry standards and legislative requirements, which will ensure minimal risk to the receiving hydrological and hydrogeological environment associated with the construction phase of the Proposed Development. The following mitigation measures will be adhered to as follows:

- Any required emergency vehicle or equipment maintenance work will take place in a designated impermeable area within the Proposed Development site.
- Emergency response procedures and contingency plans will be put in place, in the unlikely event of emergency accidents (i.e., spillages of fuels or lubricants).
- Spill kits, including oil absorbent material, will be provided and available onsite, so that any spillage of fuels, lubricants or hydraulic oils will be immediately contained.
- In the event of a leak or spill from equipment in the instance of a mechanical breakdown during operation, any contaminated soil will be removed from the Proposed Development site and compliantly disposed offsite. Residual soil will be tested to validate that all potentially contaminated material has been removed. This procedure will be undertaken in accordance with industry best practice procedures, standards and EPA guidelines.
- All site staff (i.e., construction staff) staff will be familiar with the emergency procedures in the event of accidental fuel spillages.
- All construction works staff onsite will be fully trained on the use of equipment.

This procedure will be undertaken in accordance with industry best practice procedures and standards. These measures will ensure that there is minimal risk to the receiving land, soil and geology associated with the construction stage of the Proposed Development.

**Welfare Facilities**

Welfare facilities have the potential, if not managed appropriately, to release organic and other contaminants to ground or surface water courses. Foul drainage from temporary welfare facilities during the construction phase of the Proposed Development will be discharged to temporary holding tank(s) the contents of which will periodically be tankered offsite to a licensed facility. All waste from welfare facilities will be managed in accordance with the relevant statutory obligations by an appropriately authorised contractor.

Any connection to the public foul drainage network during the construction phase of the Proposed Development will be undertaken in accordance with the necessary temporary discharge licences issued by Uisce Éireann (UE).

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#### 17.3.3.1.2 Monitoring

During the construction phase of the Proposed Development, the following monitoring measures will be implemented where appropriate:

- Routine inspections of construction activities will be carried out on a daily basis by the contractor staff to ensure all controls to prevent environmental effect, relevant to the construction activities taking place at the time, are in place. Environmental inspections will ensure that the works are undertaken in compliance with the CEMP (WM, 2025c) and that the requirements of the Conditions of Planning, the NIS and associated documentation are being adhered to during construction.
- Routine monitoring and inspections during refuelling and concrete works to ensure no adverse effects and compliance with avoidance, remedial and mitigation measures.
- Inspections and monitoring will be undertaken during excavations and other groundworks to ensure that measures that are protective of water quality are fully implemented and effective.
- The excavation and reuse of soil onsite will be subject to control procedures which will include soil quality testing to ensure suitability for onsite use in accordance with engineering and environmental specification for the Proposed Development that will be determined during the detailed design phase.
- Where the material is not suitable for re-use and considered a waste, additional sampling and assessment of soil and materials may be required to ensure that the materials are managed and removed offsite in accordance with waste management legislation. The waste classification of sample results will be based on the following method:
    - Soil sample collection and analysis in accordance with relevant industry standards including but not limited to:
        - EPA guidance document 'List of Waste & Determining if Waste is Hazardous or Non-hazardous and Waste Classification' (EPA, 2018); and
        - BS 10175:2011 Investigation of potentially contaminated sites - Code of practice (BSI, 2011).
    - Assessment of results to determine if the sample is a hazardous or non-hazardous waste and assigning a List of Waste (LoW) Code to the sampled material in accordance with EPA guidance 'Waste Classification – List of Waste & Determining if Waste is Hazardous or Non-Hazardous' (EPA, 2018).
    - The material will also be assessed to determine if the material meets the waste acceptance criteria for authorised landfills and soil recovery facilities as follows:
        - Screening the sample analytical results against the waste acceptance criteria (Landfill WAC) set out in the adopted EU Council Decision 2003/33/EC establishing criteria and procedures for the acceptance of waste at landfills pursuant to Article 16 and Annex II of Directive 1999/31/EC (2002); and
        - Screening the sample analytical results against the Maximum Concentrations and/or Soil Trigger Levels set out in the Environmental Protection Agency (2020) "Guidance on Waste Acceptance Criteria at Authorised Soil Recovery Facilities" (SRF WAC).

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- The appointed contractor will monitor excavations to ensure consistency with the descriptions and classifications according to waste acceptance criteria testing carried out as part of the site investigations which will be undertaken in advance of construction works commencing.
- A dust deposition monitoring programme will be implemented during the construction phase in order to verify the continued compliance with relevant standards and limits. Where required, the appointed contractor will undertake dust monitoring at a range of nearest sensitive receptors during the construction phase of the Proposed Development with the Technical Instructions on Air Quality Control (TA Luft) dust deposition limit set at 350 mg/m$^2$/day, averaged over one year and applied as a 30-day average.
- Materials management and waste audits will be carried out at regular intervals to monitor the following:
    - Management of soils onsite and for removal offsite.
    - Record keeping.
    - Traceability of all materials, surplus soil and other waste removed from the site.
    - Ensure records are maintained of material acceptance at the end destination.

#### *17.3.3.2 Operational Phase*

##### 17.3.3.2.1 Mitigation

Taking account of the design of the Proposed Development, it has been conclusively determined that there will be no significant effects on the receiving land, soil, or geological environment during the operational phase. The predicted effects identified in the relevant chapter of this EIAR are considered to be imperceptible and not significant in the context of the EIA Directive. Therefore, there is no requirement for any mitigation measures for the operational phase.

##### 17.3.3.2.2 Monitoring

There are no monitoring requirements specifically in relation to land, soil and geology during the operational phase of the Proposed Development.

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### 17.3.4 Hydrology and Hydrogeology

#### *17.3.4.1 Construction Phase*

##### 17.3.4.1.1 Mitigation

During the Construction Phase, all works will be undertaken in accordance with the Construction Waste Management Plan (CWMP) / Construction Environmental Management Plan (CEMP) (WM, 2025b and WM, 2025c) and the Resource and Waste Management Plan (RWMP) (DNV, 2025c). Following appointment, the contractor will be required to further develop the CWMP, CEMP and RWMP to provide detailed construction phasing and methods to manage and prevent any potential emissions to ground and surface water with regard to the relevant industry standards (e.g., Guidance for Consultants and Contractors, CIRIA-C532', CIRIA, 2001). The CWMP, CEMP and RWMP will be implemented for the duration of the construction phase, covering construction and waste management activities that will take place during the construction phase of the Proposed Development.

Mitigation works will be adopted as part of the construction works for the Proposed Development. These measures will address the main activities of potential effect which include:

- Control and Management of surface water runoff.
- Control and management of shallow groundwater during excavation and dewatering.
- Management and control of soil and materials.
- Appropriate fuel and chemical handling, transport and storage.
- Management of accidental release of contaminants at the site.
- Control and handling of cementitious materials.

The construction works will be managed in accordance with all statutory obligations and regulations and with standard international best practice. Good construction management practices will minimise the risk of pollution from construction activities at the subject site including but not limited to:

- Construction Industry Research and Information Association (CIRIA), 2001. Control of Water Pollution from Construction Sites, Guidance for Consultants and Contractors.
- CIRIA, 2015. Environmental Good Practice on Site (C741).
- Enterprise Ireland Oil Storage Guidelines (BPGCS005).
- Environmental Protection Agency (EPA), 2013. IPC Guidance Note on Storage and Transfer of Materials for Scheduled Activities.
- CIRIA, 2007. The SuDS Manual (C697).
- UK Environment Agency, 2004. UK Pollution Prevention Guidelines (PPG).
- CIRIA, 2006. Control of Water Pollution from Linear Construction Projects: Technical Guidance (C648).
- Inland Fisheries Ireland (2016). Guidelines on Protection of Fisheries during Construction Works in and Adjacent to Waters.

**Control and Management of Water and Surface Runoff**

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There will be no direct discharge to groundwater or surface water during the construction phase of the Proposed Development. The following mitigation measures will be adhered to during the construction phase of the Proposed Development:

- Where surface water runoff must be pumped from the excavations, water will be managed in accordance with best practice standards (i.e., CIRIA C750), the CEMP (WM, 2025b) and regulatory consents to minimise the potential effect on the local groundwater flow regime within the underlying aquifer and surface water bodies.
- Unauthorised discharge of water (groundwater / surface water runoff) to ground, drains or watercourses will not be permitted. The Main Contractor will ensure that the discharge of water to ground, drains or watercourses will be in accordance with the necessary discharge licences issued by UE under Section 16 of the Local Government (Water Pollution) Acts and Regulations for any water discharges to sewer or from Meath County Council under Section 4 of the Local Government (Water Pollution) Act 1977, as amended in 1990 for discharges to surface water.
- Cut-off trenches will be constructed prior to stripping topsoil along the northern boundary of the Proposed Development. These cut-off trenches will have a settlement pond / silt trap at the end of each trench with an overflow. Straw bales will be placed within the cut-off trenches at strategic locations and at the outfall of the settlement ponds to the overflow. Silt fencing will also be installed on the downgradient side of the cut-off trenches to prevent surface water runoff to the water course and will be retained in place for the duration of the construction phase until the development is complete. The project specific CEMP (which will be prepared by the main contractor in advance of construction works commencing) will identify how the silt fencing is to be installed and maintained throughout the construction phase.
- All existing services will be located using service records, GPR surveys and slit trenches to ensure that their position is accurately identified before excavation works commence.
- All water leaving the site during construction will be desilted using standard techniques. Settlement ponds/silt traps will be provided by the contractor where necessary and regularly maintained to prevent silts and soils from being washed away into the existing ditches/watercourses during periods of heavy rain and during the drainage works.
- The Main Contractor will appoint a suitably qualified person to oversee the implementation of measures for the prevention of pollution to the receiving surface water environment.
- Regular testing of surface water discharges will be undertaken at the outfall from the subject lands. The location will be agreed between the project ecologist and the site foreman at the commencement of works. Trigger levels for halting works and re-examining protection measures will be: pH >9.0 or pH 25 mg/l. These trigger levels are based on those outlined within ‘Guidelines on Protection of Fisheries During Works in and Adjacent to Waters (IFI, 2016)’.
- Where silt control measures are noted to be failing or not working adequately, works will cease in the relevant area. The project ecologist will review and agree alternative pollution control measures, such as deepening or redirecting trenches as appropriate, before works may recommence.

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- The use of wheel wash and water treatment facilities will be used as required onsite. The correct use and management of these will be undertaken by the appointed contractor to ensure that there is no harm to the receiving water environment.
- Where required, stockpiles of loose materials pending re-use onsite will be protected for the duration of the works and not located in areas where sediment laden runoff may enter existing surface water drains.
    - To help shed rainwater and prevent ponding and infiltration, the sides and top of the stockpiles will be regraded to form a smooth gradient with compacted sides reducing infiltration and silt runoff.
    - Where required, silt fences will be erected at the toe of stockpiles to prevent runoff.
    - The silt fences will be monitored daily by the appointed contractor and silt will be removed as required.
- A regular review of weather forecasts of heavy rainfall will be conducted, and a contingency plan will be prepared before and after such events to minimise any potential nuisances. As the risk of the break-out of silt-laden runoff is higher during these weather conditions, no work will be carried out during such periods where possible.

**Concrete Works**

The use of cementitious grout used during the construction phase of the Proposed Development will avoid any contamination of the receiving hydrogeological environment through the use of appropriate design and methods implemented by the appointed contractor and in accordance with the CEMP (WM, 2025b), and relevant industry standards to prevent impact on groundwater and surface water quality such as the use of water compatible grout.

The following are mitigation measures that need to be adhered to when using concrete for the Proposed Development:

- All ready-mixed concrete will be delivered to the site by truck.
- Concrete batching will take place offsite.
- Wash down and wash out of concrete trucks will take place into a container located within a controlled bunded area which will then be emptied into a skip for appropriate compliant removal offsite in accordance with all relevant waste management legislation.
- Any excess concrete is not to be disposed of onsite.
- Pouring of cement-based materials for works will only be carried out in dry conditions and pumped concrete will be monitored to ensure there is no accidental discharge.
- A suitable risk assessment for wet concreting shall be completed prior to works being carried out. Pumped concrete will be monitored to ensure there is no accidental discharge.
- Pouring of concrete will not be permitted within 50m of any watercourse during inclement weather.

**Handling of Fuels, Chemicals and Materials**

Fuelling and lubrication of equipment will be carried out in accordance with the procedures outlined in the CEMP (WM, 2025b), in a designated area of the site (i.e., bunded areas) away

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from any watercourses and drains (where not possible to carry out such activities offsite) with full attendance of plant operatives.

Fuel will not be stored onsite for the duration of the construction phase. Fuel will only be brought to site via mobile fuel bowser. Any other oils or hydraulic oils stored onsite will be stored in designated areas in suitable tanks and containers. These areas will be bunded and located away from surface water drainage and features (i.e., bunded compounds on flat ground at the Contractor's compound or at a location at least 50m from any watercourse or other water conducting features, including the cut off trenches). The main contractor will maintain an emergency response action plan and emergency procedures will be developed by the appointed contractor in advance of any works commencing.

- Bunds will have regard to Environmental Protection Agency guidelines 'Amendment to IPC Guidance Note on Storage and Transfer of Materials for Scheduled Activities' (EPA, 2013). All tank and drum storage areas will, as a minimum, be bunded to a volume not less than the greater of the following:
    - 110% of the capacity of the largest tank or drum within the bunded area; or
    - 25% of the total volume of substance that could be stored within the bunded area.
- Strict supervision of contractors will be adhered to in order to ensure that all plant and equipment utilised onsite is in good working condition.
- Any equipment not meeting the required standard will not be permitted for use within the Proposed Development site.
- Only emergency breakdown maintenance will be carried out onsite.
- Drip trays and spill kits will be available onsite to ensure that any spills from vehicles are contained and removed offsite.
- Spill kits will be made available and kept onsite at all times and identified with signage for use in the event of an environmental spill or leak.
- A spill kit will be kept in close proximity to the fuel storage area for use in the event of any incident during refuelling or maintenance works.
- Heavy machinery used on the site will also be equipped with its own spill kit.
- Method statements for dealing with accidental spillages will be provided by the Contractor for review by the Employer's Representative.
- There may also be the requirement for use of portable generators or similar fuel containing equipment during the construction phase of the Proposed Development, which will be placed on suitable drip trays. Regular monitoring of drip tray content will be undertaken to ensure sufficient capacity is maintained at all times.
- Suitable bunded areas will be installed for oil and petrol storage tanks.
- Designated fuel filling points will be put in place with appropriate oil and petrol interceptors to provide protection from accidental spills.
- Where contractors are required to refuel vehicles, this will only be carried out at the designated refuelling location within the site storage compound, which must employ pollution control mechanisms to prevent escape of fluids to the river. No refuelling is permitted on site, i.e. within the river or adjacent due to risk of spillage.
- The local authority will be informed immediately of any spillage or pollution incident that may occur onsite during the construction phase.

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**Emergency Procedures**

Emergency procedures will be developed by the appointed contractor in advance of works commencing. Remedial action will be immediately implemented to address any potential impacts in accordance with industry standards and legislative requirements. The following mitigation measures will be adhered to as follows:

- Any required emergency vehicle or equipment maintenance work will take place in a designated impermeable area within the site.
- Emergency response procedures and contingency plans will be put in place, in the unlikely event of emergency accidents (i.e., spillages of fuels or lubricants).
- Spill kits, including oil absorbent material, will be provided and available onsite, so that any spillage of fuels, lubricants or hydraulic oils will be immediately contained.
- In the event of a leak or spill from equipment in the instance of a mechanical breakdown during operation, any contaminated soil will be removed from the Proposed Development site and compliantly disposed of offsite. Residual soil will be tested to validate that all potentially contaminated material has been removed. This procedure will be undertaken in accordance with industry best practice procedures, standards and EPA guidelines.
- All construction works staff will be familiar with the emergency procedures in the event of accidental fuel spillages.
- All construction works staff onsite will be fully trained on the use of equipment.

**Infrastructure**

All below ground drainage infrastructure will be constructed in accordance with current UE requirements to ensure that there are no potential impacts to groundwater quality.

**Welfare Facilities**

Temporary welfare facilities have the potential, if not managed appropriately, to release organic and other contaminants to ground or surface water courses.

The following mitigation measures will be adhered to during the construction phase of the Proposed Development as follows:

- Foul drainage will be discharged to temporary holding tank(s) the contents of which will periodically be tankered offsite to a licensed facility by an appropriately authorised contractor.
- All waste will be managed in accordance with the relevant statutory obligations.
- Any connection to the public foul drainage network during the construction phase of the Proposed Development will be undertaken in accordance with the necessary temporary discharge licences issued by UE.

#### 17.3.4.1.2 Monitoring

During the construction phase of the Proposed Development the following monitoring measures will be considered:

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- An Ecological Clerk of Works (ECoW) or Project Ecologist will be appointed to ensure best practices are carried out during any works carried out near the drainage ditch onsite.
- The Project Ecologist will supervise the sampling of suspended solids downstream prior to commencement of works, and weekly during remediation works. Samples will be analysed onsite. Should results show a 10% increase in suspended solids downstream of the site this will be brought to the attention of the contractor by the Project Ecologist and any suitable contingency measures will be instigated.
- Routine inspections of construction activities will be undertaken, on a daily basis by the contractor staff, during excavations and other groundworks to ensure that measures that are protective of water quality outlined in this EIAR are fully implemented and effective and are in compliance with the CEMP (WM, 2025b) and that the requirements of the Conditions of Planning, the NIS and associated documentation are being adhered to during construction.
- The Project Ecologist will keep records of works undertaken.
- All surface water control measures including silt traps, silt fences and settlement ponds will be checked regularly and maintained as necessary, in order to ensure continued effectiveness throughout the construction phase.
- Surface water samples will be collected at the commencement of works to establish the baseline scenario. The monitoring locations will be agreed with MCC in advance of works commencing.
- Visual inspection of the watercourse/ditch will be undertaken daily to ensure no sediment/pollutant deposits are evident. Additionally, the Contractor will develop their own site inspection programme, which will include an inspection procedure and relevant forms to record any issues.
- Only suitably-trained staff will undertake environmental site inspections.
- Water samples will be taken once a month during the construction phase to demonstrate compliance with surface water regulation EQS standards. The monitoring locations will be agreed with MCC in advance of works commencing.
- The proposed surface water monitoring suite will include the following parameters: pH, electrical conductivity, total suspended solids, Total Petroleum Hydrocarbons, nitrate, ammonia, and COD. However, the final suite of analysis will be agreed with MCC in advance of works commencing.
- Discharges to surface water / foul sewers will be monitored where required in accordance with statutory consents (i.e., discharge licence). Where required, water pumped from excavations will be treated and pumped to a holding area, where it will be sampled and tested by the contractor before discharge. Upon receiving analysis results and screening against required consent limits, the contractor will arrange for appropriate disposal.
- Routine monitoring and inspections during refuelling, concrete works to ensure no impacts and compliance with avoidance, remedial and mitigation measures.

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### *17.3.4.2 Operational Phase*

#### 17.3.4.2.1 Mitigation

Based on the design of the Proposed Development there are limited potential sources of contamination during the operational phase. Surface water will be managed in accordance with the principles and objectives of SuDS and the GDSDS to treat and attenuate water prior to discharging offsite. Ongoing regular operational monitoring and maintenance of drainage and the SuDS measures will be incorporated into the overall management strategy for the Proposed Development. This will ensure that there are no effects on water quality and quantity (flow regime) during the operational phase of the Proposed Development.

Foul water during the operational phase of the Proposed Development will ultimately discharge via the Drogheda WWTP to the Boyne Estuary Plume Zone coastal waterbody. The Drogheda WWTP is operated in accordance with relevant statutory approvals issued by UE. Foul water from the site will only be discharged to the UE network under the appropriate consents from UE, and therefore, the Proposed Development will not cause a potential effect at any Natura 2000 sites associated with discharges from the site.

There is no other requirement for mitigation measures for the operational phase of the Proposed Development.

#### 17.3.4.2.2 Monitoring

Ongoing regular operational monitoring and maintenance of drainage and the Sustainable Drainage Systems (SuDS) measures will be undertaken throughout the lifetime of the operational phase of the Proposed Development.

In addition, surface water quality monitoring will be undertaken at the outlet to the existing culvert following completion of the construction phase of the Proposed Development in order to ensure that the discharge is meeting all the relevant EQS limits. The scope and frequency of sampling will be agreed with Meath County Council in advance.

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### 17.3.5 Air Quality

#### *17.3.5.1 Construction Phase*

##### 17.3.5.1.1 Mitigation

To minimise potential air quality impacts during construction, a suite of best practice mitigation measures will be implemented at the Proposed Development site. These measures are informed by guidance from the IAQM (2024) and are designed to effectively manage dust and emissions. The following measures will be adopted as appropriate to the scale and nature of the works:

**Communications**

- Develop and implement a stakeholder communications plan that includes community engagement before work commences on site;
- Display the name and contact details of person(s) accountable for air quality and dust issues on the site boundary. This may be the environment manager/engineer or the site manager;
- Display the head or regional office contact information; and
- Develop and implement a Dust Management Plan (DMP), the final dust management plan will form part of the overall construction management plan which will formally be prepared and submitted to Meath County Council post grant of planning permission.

**Site Management**

- Record all dust and air quality complaints, identify cause(s), take appropriate measures to reduce emissions in a timely manner, and record the measures taken;
- Make the complaints log available to the local authority when asked;
- Record any exceptional incidents that cause dust and/or air emissions, either on- or off-site, and the action taken to resolve the situation in the site log book; and
- Hold regular liaison meetings with other high risk construction sites within 250m of the site boundary, to ensure plans are co-ordinated and dust and particulate matter emissions are minimised. It is important to understand the interactions of the off-site transport/deliveries which might be using the same strategic road network routes.

**Monitoring**

- Undertake daily on-site and off-site inspection, where receptors (including roads) are nearby, to monitor dust, record inspection results, and make the log available to Meath County Council when asked. This should include regular dust soiling checks of surfaces such as street furniture, cars and window sills within 100m of site boundary, with cleaning to be provided if necessary;
- Carry out regular site inspections to monitor compliance with the DMP, record inspection results, and make an inspection log available to Meath County Council when asked; and

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- Increase the frequency of site inspections by the person accountable for air quality and dust issues on site when activities with a high potential to produce dust are being carried out and during prolonged dry or windy conditions.

**Preparing and Maintaining the site**

- Plan site layout so that machinery and dust causing activities are located away from receptors, as far as is possible;
- Erect solid screens or barriers around dusty activities or the site boundary that are at least as high as any stockpiles on site;
- Fully enclose site or specific operations where there is a high potential for dust production and the site is actives for an extensive period;
- Avoid site runoff of water or mud;
- Keep site fencing, barriers and scaffolding clean using wet methods;
- Remove materials that have a potential to produce dust from site as soon as possible, unless being re-used on site. If they are being re-used on-site cover as described below; and
- Cover, seed or fence stockpiles to prevent wind whipping.

**Operating Vehicle/Machinery and Sustainable Travel**

- Ensure all vehicles switch off engines when stationary - no idling vehicles;
- Avoid the use of diesel- or petrol-powered generators and use mains electricity or battery powered equipment where practicable; and
- A speed restriction of 20kph will be applied as an effective control measure for dust for on-site vehicles using unpaved haul roads.

**Operations**

- Only use cutting, grinding or sawing equipment fitted or in conjunction with suitable dust suppression techniques such as water sprays or local extraction, e.g. suitable local exhaust ventilation systems;
- Ensure an adequate water supply on the site for effective dust/particulate matter suppression/ mitigation, using non-potable water where possible and appropriate;
- Use enclosed chutes and conveyors and covered skips;
- Minimise drop heights from conveyors, loading shovels, hoppers and other loading or handling equipment and use fine water sprays on such equipment wherever appropriate; and
- Ensure equipment is readily available on site to clean any dry spillages and clean up spillages as soon as reasonably practicable after the event using wet cleaning methods.

**Waste Management**

- Avoid bonfires and burning of waste materials.

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**Measures Specific to Demolition**

- Ensure effective water suppression is used during demolition operations. Handheld sprays are more effective than hoses attached to equipment as the water can be directed to where it is needed. In addition, high volume water suppression systems, manually controlled, can produce fine water droplets that effectively bring the dust particles to the ground;
- Avoid explosive blasting, using appropriate manual or mechanical alternatives; and
- Bag and remove any biological debris or damp down such material before demolition;

**Measures Specific to Earthworks**

- Re-vegetate earthworks and exposed areas/soil stockpiles to stabilise surfaces as soon as practicable;
- Use Hessian, mulches or trackifiers where it is not possible to re-vegetate or cover with topsoil, as soon as practicable; and
- Only remove the cover in small areas during work and not all at once.

**Measures Specific to Construction**

- Ensure sand and other aggregates are stored in bunded areas and are not allowed to dry out, unless this is required for a particular process, in which case ensure that appropriate additional control measures are in place.

**Measures Specific to Trackout**

- Use water-assisted dust sweeper(s) on the access and local roads, to remove, as necessary, any material tracked out of the site. This may require the sweeper being continuously in use;
- Avoid dry sweeping of large areas;
- Ensure vehicles entering and leaving sites are covered to prevent escape of materials during transport;
- Inspect on-site haul routes for integrity and instigate necessary repairs to the surface as soon as reasonably practicable;
- Record all inspections of haul routes and any subsequent action in the site log book;
- Install hard surfaced haul routes, which are regularly damped down with fixed or mobile sprinkler systems or mobile water bowsers and regularly cleaned;
- Implement a wheel washing system (with rumble grids to dislodge accumulated dust and mud prior to leaving the site where reasonably practicable);
- Ensure there is an adequate area of hard surfaced road between the wheel wash facility and the site exit, wherever site size and layout permit; and
- Access gates to be located at least 10m from receptors where possible.

**Measures Specific to Ecological Receptors**

- Dust suppression: Using water sprays, dust suppressants, or covering materials to reduce dust particles;

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- Vegetative barriers: Planting trees, shrubs or grasses to act as windbreaks and capture dust particles;
- Site management: Implementing good housekeeping practices, such as regular cleaning of access roads and minimising the movement of vehicles on unpaved surfaces;
- Monitoring: Regularly monitoring dust levels and ecological receptors to ensure that mitigation measures are effective; and
- Timing of activities: Scheduling dust-generating activities during periods of low wind or when ecological receptors are less sensitive.

These measures will be monitored and reviewed throughout the construction phase to ensure their effectiveness and compliance with relevant standards.

#### 17.3.5.1.2 Monitoring

The monitoring of construction dust during the construction phase of the Proposed Development is recommended to ensure that effects are not experienced beyond the site boundary. Monitoring of dust can be carried out by using the Bergerhoff Method. This involves placing Bergerhoff Dust Deposit Gauges at a strategic locations along the site boundaries for a period of 30 +/- 2 days. The selection of sampling point locations should be carried out in consideration of the requirements of *VDI 2119* with respect to the location of the samplers relative to buildings and other obstructions, height above ground, and sample collection and analysis procedures. After the exposure period is complete, the gauges should be removed from the site; the dust deposits in each gauge will then be determined gravimetrically and expressed as a dust deposition rate in mg/m$^2$/day in accordance with the relevant standard.

### *17.3.5.2 Operational Phase*

#### 17.3.5.2.1 Mitigation

It has been determined that the operational phase air quality effect is negligible and therefore, no site-specific mitigation measures are proposed.

#### 17.3.5.2.2 Monitoring

Due to the negligible effect on air quality from the operational phase of the Proposed Development, no specific monitoring is recommended except for monitoring via the Bergerhoff Method.

## 17.3.6 Climate

### *17.3.6.1 Construction Phase*

#### 17.3.6.1.1 Mitigation

Embodied carbon of materials and construction activities is the primary source of climate impacts during the construction phase. The Construction Waste Management Plan, (January 2025), prepared by Waterman Moylan which accompanies this planning application details a number of measures to reduce the embodied carbon of the demolition works. Further pre-construction carbon Avoidance, Remedial & Mitigation Measures include:

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**Design for Performance**

- Request a Design for Performance approach from design teams and contractors.
- Include contractual targets for whole life carbon with a focus on Net Zero and nature-positive goals where possible.

**Circularity in Design**

- Require design teams to develop a circularity concept for projects, focusing on adaptability, disassembly, and reuse.
- Set a target for a percentage of reused and recycled materials in designs.

**Building Lifecycle Report**

- Ensure the building lifecycle report is regularly reviewed and updated in line with current policy and best practice for sustainable construction.

**Carbon Literacy**

- Develop carbon literacy within design and construction teams by providing training on carbon literacy, ESG reporting, and disclosure.
- Incorporate sustainability and carbon considerations into site team talks, construction targets, and reporting.
- Include training clauses for contractors and sub-contractors to upskill their teams in low-energy construction techniques.

**Building Renovation Passports (BRPs)**

- Request Building Renovation Passports for this asset as part of the roadmap to decarbonise each asset.

**Cement Reduction**

- Specify the minimum amount of cement needed in concrete and substitute where feasible to reduce cement usage.

**Sustainable Procurement**

- Review sustainable procurement and material choices during detailed design to identify and implement lower embodied carbon options.
- Request Environmental Product Declarations (EPDs) and prefer products with EPDs where possible within procurement restrictions.
- Drive demand for EPDs by increasing the percentage of products used in the project with EPDs.

**European Framework for Sustainable Buildings**

- Commit to using key indicators from the European Framework for sustainable buildings, Level(s), with support from the IGBC.

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- Focus on indicators such as Life Cycle Assessment (LCA), Life Cycle Cost (LCC), Indoor Air Quality (IAQ), and Circularity.

**Energy and Carbon Performance Reporting**

- Plan to disclose the operational energy and carbon performance of the project in your annual reporting.

**Post-Occupancy Evaluation**

- Allow for post-occupancy evaluation of completed developments to ensure feedback is passed to the design team.

**Demolition and Construction Waste Management**

- Create a demolition and construction programme allowing sufficient time to determine reuse and recycling opportunities for demolition waste.
- Appoint a competent demolition contractor to undertake a pre-demolition audit detailing resource recovery best practice and identifying materials for reuse and recycling.
- Reuse materials on site in the new build areas where possible.

**EU Taxonomy Compliance**

- Commit to complying with EU taxonomy requirements on the circular economy, specifically reuse, recycling, and material recovery of demolition and construction waste.
- Review and ensure compliance with the EU Taxonomy Regulation (EU) 2020/852 regarding circular economy practices for demolition and construction waste.

**Local Material Sourcing**

- Source materials locally where possible to reduce transport-related CO2 emissions.

**Building Certifications**

- Aim for building certifications such as HPI (Home Performance Index), LEED (Leadership in Energy and Environmental Design), or equivalent, to ensure sustainable and high-performance standards are met throughout the project.

Regarding the development's resilience to climate change, the Contractor will be required to mitigate the effects of extreme weather, such as heavy rainfall, flooding, windstorms, and temperature fluctuations, through site risk assessments and method statements. Additionally, certified datasheets for construction materials will outline their operational temperature limits, ensuring that temperature-sensitive materials perform adequately. The Contractor will also address risks associated with fog, lightning, and hail through appropriate risk assessments and mitigation plans.

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During the construction phase the following best practice measures shall be implemented on site to prevent significant GHG emissions and reduce impacts to climate:

- **Energy-Efficient Equipment:** Use energy-efficient machinery and equipment on-site. Regular maintenance and proper operation can also help reduce fuel consumption and emissions.
- **Renewable Energy:** Incorporate renewable energy sources, such as solar panels, to power construction activities. This can significantly reduce reliance on fossil fuels
- **Reduce Idling**: Prevention of on-site or delivery vehicles from leaving engines idling, even over short periods.
- **Sustainability Awareness**: Ensure that sustainability and carbon specifically is incorporated into site team talks, construction, and reporting targets. Integrate training clauses for contractors and sub-contractors to upskill their onsite personnel including sub-contractors in low energy construction skills. Appoint sustainability champions to ensure that the project continues to perform in a sustainable manner.
- **Sustainable Transportation**: Encourage carpooling, use of public transportation, or electric vehicles for workers commuting to the site.
- **Monitoring and Reporting:** Regularly monitor and report GHG emissions from the construction site. This helps in identifying areas for improvement and ensuring compliance with environmental standards. Sustainability spot checks should be added to ongoing site inspections and feedback shared with all onsite to ensure measures are being adopted.
- **Maintenance**: Ensure all plant and machinery are well maintained and inspected regularly.
- **Waste Management:** Implement a robust waste management plan to reduce, reuse, and recycle construction waste. Proper waste management can significantly cut down on emissions. Minimising waste of materials due to poor timing or over ordering on site will aid to minimise the embodied carbon footprint of the site. The waste management hierarchy will be applied to all waste material generated.
- **Sustainable Procurement:** Sourcing low carbon materials locally where possible to reduce transport related CO2 emissions

#### 17.3.6.1.2 Monitoring

The following monitoring strategies shall be adhered to in order to ensure compliance with the environmental objectives outlined in this EIA. These strategies are essential for effectively managing the environmental effects associated with the demolition and construction phases, with a particular focus on resource recovery, waste management, and the reduction of greenhouse gas (GHG) emissions.

**Monitoring of Demolition Waste Reuse and Recycling**

To optimise the reuse and recycling of demolition materials, the following measures will be implemented:

- Material Reuse Tracking System: A digital tracking system could be established to monitor materials identified for reuse or recycling. This system will log details such as quantities, conditions, and intended applications within the new construction areas. It is important that this system is regularly updated to reflect ongoing recovery efforts.

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- Weekly Progress Reports: It is suggested that the demolition contractor be required to submit weekly progress reports. These reports should provide detailed metrics on the volumes of materials recovered, reused, and recycled, alongside any challenges encountered. This approach will allow for the early identification of issues and timely adjustments to the recovery plan.
- Regular On-Site Inspections: It is recommended that regular inspections are conducted to verify that materials earmarked for reuse are being properly stored and handled. These inspections should ensure that materials remain in suitable condition for their intended use in the new build areas.

**Competency and Performance of Demolition Contractor**

To ensure that the demolition process aligns with the project's environmental goals, we propose the following monitoring measures:

- Verification of Pre-Demolition Audit: The pre-demolition audit conducted by the appointed contractor should be thoroughly reviewed to confirm that all materials and components suitable for reuse or recycling have been accurately identified. This review will ensure that the audit reflects best practice in resource recovery.
- Periodic Contractor Performance Reviews: It is suggested conducting periodic performance reviews of the demolition contractor. These reviews should focus on their adherence to the resource recovery plan, the accuracy of material identification, and their overall compliance with project timelines without compromising environmental standards.

**Compliance with EU Taxonomy for Circular Economy**

Given the project's commitment to meeting EU taxonomy requirements, the following is recommended:

- Comprehensive Documentation and Reporting: It is essential to maintain detailed records that document compliance with the circular economy principles outlined in the EU taxonomy. This documentation should include logs of all recycled materials, percentages of materials reused on-site, and detailed descriptions of how circular economy practices are being implemented.
- Independent Third-Party Audits: It is recommended engaging an independent auditor to periodically assess the project's compliance with the EU taxonomy. The audit should verify the accuracy of reported data and ensure that the circular economy requirements are fully adhered to throughout the project.

**Monitoring of GHG Emissions Reduction Measures**

To mitigate the project's impact on climate change, the following monitoring activities are proposed:

- Appoint sustainability champions to ensure that the project continues to perform in a sustainable manner including monitoring and reporting of performance on site.
- Idle Time Monitoring for Vehicles and Machinery: It is suggested installing GPS or telematics systems on all vehicles and machinery used on-site to monitor engine idling times. Automatic alerts should be set up to notify site managers when idling exceeds

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a specified threshold, enabling prompt corrective action to reduce unnecessary emissions.

- Maintenance Logs for Plant and Machinery: Implementing a digital maintenance log system to track the inspection and maintenance of all on-site equipment is recommended. This system should record inspection dates, maintenance activities, and any identified issues, ensuring that all machinery operates efficiently and with minimal emissions.
- Material Waste Minimisation Tracking: A monitoring system should be developed to track material orders and usage. This system should identify trends in over-ordering or inefficient material use, enabling the project team to take corrective actions that will help minimise the embodied carbon footprint of the site.

**Application of Waste Hierarchy**

To optimise waste management on-site, the following monitoring protocols will be followed:

- Waste Segregation Audits: Regular audits will be conducted to ensure that waste is being properly segregated according to the waste hierarchy (reduce, reuse, recycle). These audits will help identify opportunities for improving waste management practices and reducing overall waste generation.
- Monthly Waste Management Reports: Monthly reports detailing the volume of waste reduced, reused, and recycled will be generated. These reports should be compared against predefined targets to assess the effectiveness of the waste management strategies and to identify areas for improvement.

**Local Sourcing of Materials**

To reduce transport-related emissions and support local suppliers, the following measures will be taken:

- Supplier Distance Monitoring: A database of suppliers will be developed, documenting the distance of each supplier from the construction site. This database should be used to monitor and minimise the carbon footprint associated with material transportation, prioritising local suppliers wherever possible.
- Transport-Related Carbon Footprint Analysis: A carbon footprint analysis for the transportation of all materials to the site will be conducted. This analysis should inform the selection of suppliers, with a preference for those within a closer radius to reduce $CO^2$ emissions.

These monitoring measures are designed to ensure that the project adheres to its environmental commitments, particularly in the areas of resource recovery, waste management, and greenhouse gas emissions reduction. By implementing these strategies, the project will not only comply with regulatory requirements but also contribute to broader environmental sustainability goals. Regular reporting, on-site inspections, and third-party audits will be critical to maintaining compliance and achieving the desired environmental outcomes.

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### *17.3.6.2 Operational Phase*

#### 17.3.6.2.1 Mitigation

A number of measures have been incorporated into the design of the development in order to mitigate against the impacts of future climate change. For example, adequate attenuation and drainage have been incorporated into the design of the development to avoid potential flooding impacts as a result of increased rainfall events in future years. These measures have been considered when assessing the vulnerability of the Proposed Development to climate change (see Section 9.7.3).

The Proposed Development has been designed to reduce the impact on climate as a result of energy usage during operation. The Energy, Utilities and Telecommunications Statement prepared by McElligott and Building Lifecycle report prepared by Aramark and submitted under separate cover with this planning application details a number of incorporated design mitigation measures that have been incorporated into the design of the development to reduce the impact on climate wherever possible.

Such measures included in the Proposed Development to reduce the impact to climate from energy usage are:

- The development will be in compliance with the requirements of the Near Zero Energy Building (NZEB) Standards.
- A renewable energy rating (RER) of 20% will be achieved to comply with Part L (2021) of the NZEB regulations.
- A Building Energy Rating (BER) of A2/A3 is being targeted.
- Improved building thermal transmittance (U-Values), air permeability and thermal bridging.
- Use of air source heat pumps.
- Sustainability information provided to building occupants.
- Smart building technologies.

In addition, electric vehicle and bicycle parking will be provided within the Proposed Development which will promote the use of more sustainable modes of transport and reduce potential transport emissions. Full descriptions of the measures proposed and their benefits are outlined within the Building Lifecycle Report submitted with this application.

#### 17.3.6.2.2 Monitoring

An Environmental Management Plan that incorporates adaptive management principle will be developed and implemented for the operational lifecycle stage of the Proposed Development.

The Applicant will ensure climate change resilience plans are robust, will continue monitoring trends in weather events; and continue to review resilience measures related to interdependencies.

The following monitoring strategies will be applied to ensure that the Proposed Development meets its environmental objectives. These strategies focus on mitigating the effects of climate change, enhancing energy efficiency, and promoting sustainable transport, all of which are aligned with best practices outlined in IEMA guidelines.

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**Monitoring of Climate Change Mitigation Measures**

- **Attenuation and Drainage Systems Monitoring**: Consistent with IEMA's guidance on climate resilience, regular inspections will be undertaken to verify the functionality of the attenuation and drainage systems. These inspections should be conducted during construction, after significant rainfall events, and periodically thereafter to ensure long-term effectiveness in preventing flooding.
- **Climate Vulnerability Assessment Review**: In accordance with IEMA's recommendation to periodically reassess climate risks, the climate vulnerability assessment (as detailed in Section 9.7.3) will be reviewed at regular intervals. This review should incorporate the latest climate projections to ensure the mitigation measures remain adequate and effective.

**Monitoring of Energy Efficiency and Climate Impact Reduction**

To minimise the effects of the development on climate through energy use during operation, the following monitoring activities shall be undertaken:

- **NZEB Compliance Verification**: Continuous monitoring during the construction phase will ensure that the development complies with the Near Zero Energy Building (NZEB) Standards. This includes verifying that all building components and systems meet the NZEB criteria.
- **EU Taxonomy Alignment Monitoring**: Ensure that the development achieves energy performance that is at least 10% lower than the NZEB requirements. Regular energy performance assessments should be conducted to confirm alignment with the EU Taxonomy for sustainable development.
- **Renewable Energy Ratio (RER) Compliance**: Monitoring of the implementation of renewable energy systems will take place, including solar panels and air source heat pumps, to ensure that the development achieves a Renewable Energy Ratio (RER) of 20%, in line with Part L (2021) of the NZEB regulations. Post-installation, periodic checks should be performed to verify ongoing compliance.
- **Building Energy Rating (BER) Target Achievement**: Regular energy audits will be carried out to monitor the building's energy performance, ensuring that the targeted Building Energy Rating (BER) of A2/A3 is achieved. This includes verifying the efficiency of insulation, windows, HVAC systems, and other energy-related components.
- **Thermal Performance Monitoring**: Continuous monitoring during construction will ensure that the building achieves the improved thermal transmittance (U-Values), air permeability, and thermal bridging standards specified in the design. Post-construction thermal imaging surveys and air tightness tests should be conducted to confirm that these standards have been met.

**Monitoring of Renewable Energy Systems**

To ensure the successful implementation and operation of renewable energy systems, the following monitoring measures are recommended:

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- **Air Source Heat Pump Performance**: Regular inspections and maintenance checks should be conducted on the air source heat pumps to ensure they are operating efficiently and contributing effectively to the building's energy needs. Performance metrics such as Coefficient of Performance (COP) and Seasonal Performance Factor (SPF) should be tracked and compared against the expected values.
- **Occupant Sustainability Information**: Consistent with IEMA's emphasis on stakeholder engagement, it is important to ensure that all building occupants receive comprehensive sustainability information. This should include guidance on energy conservation practices and how to use renewable energy systems effectively. Feedback mechanisms, such as surveys, should be used to assess the effects of this information on occupant behaviour.

**Monitoring of Sustainable Transport Initiatives**

To promote sustainable transport and reduce transport-related emissions, the following monitoring strategies will be utilised:

- **Electric Vehicle (EV) and Bicycle Parking Usage**: Regular monitoring should be carried out to assess the usage of electric vehicle charging stations and bicycle parking facilities within the development. This will help gauge the effectiveness of these measures in promoting sustainable transport modes. Usage data can inform whether additional facilities or adjustments are needed.
- **Transport Emissions Impact Assessment**: Periodic assessments should be conducted to evaluate the impact of the provided sustainable transport facilities on reducing overall transport emissions. This could include monitoring the uptake of electric vehicles by residents and the corresponding reduction in greenhouse gas emissions.

These monitoring recommendations are designed to ensure that the development's climate change mitigation measures, energy efficiency initiatives, and sustainable transport provisions are effectively implemented and maintained throughout the lifecycle of the project. By adhering to these strategies, the development will not only comply with relevant regulatory requirements but also contribute to broader environmental sustainability goals. Regular inspections, energy performance assessments, and occupant engagement will be crucial to achieving the desired environmental outcomes.

### 17.3.7 Noise and Vibrations

#### *17.3.7.1 Construction Phase*

##### 17.3.7.1.1 Mitigation

Best practice control measures for noise from construction sites are found within BS 5228 (2009 +A1 2014) part 1. Construction noise effects are expected to vary during the construction phase of the project this effect will depend on the distance between the construction activities and noise sensitive receptor. The contractor will ensure that all best practice noise and control methods will be used, to ensure any negative noise effects at off-site noise sensitive locations are minimised.

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The best practice measures set out in BS 5228 (2009) Part 1 includes guidance on several aspects of construction site mitigation measures, this includes the following:

- selection of quiet plant and equipment;
- noise control at source of the noise;
- screening, and;
- public liaison.

**General Recommendations**

This section of the report sets out noise mitigation options and detailed comment on each one specifically for this site.

**Selection of Plant and Equipment**

The noise effect of all plant and equipment will be assessed by an appropriately qualified acoustic consultant prior to selection of the plant for the project. Where an item of plant is identified as noisy with the potential to cause a negative noise impact it will be reviewed to check if there is an alternative quieter version of the same plant to undertake the same construction task.

**Noise Control at Source**

Where replacing a noisy item of plant is not viable or practical, consideration should be given to control the noise emanating from that plant at source. This includes modifying the piece of plant or equipment to generate less noise and using dampening to control vibration induced noise or rattling. Example best practice mitigation measures to be considered are as follows:

- All plant and equipment to be switched off when idling.
- The use of white noise reversing alarms.
- Restriction on the dropping and loading of materials to less sensitive hours.
- The use of local screening for noisy activities or works with hand tools
- Not dropping materials onto hard surfaces and using rubber mats etc for the dropping of materials.
- Ensure all plant and equipment is well maintained and cleaned, all lubrication should be in line with manufacturers guidelines.

**Screening**

Screening when used correctly can be an effective method of reducing the construction noise effect on the NSL's. The use of site hoarding and careful selection of areas for noise works, using buildings on the site, site offices and the building being constructed to screen noise from the works.

Examples of construction noise screening i.e. temporary acoustic barriers, are provided below:

- https://ventac.com/acoustic-products/noisebreak-acoustic-barrier/
- https://echobarrier.com/

**Public Engagement**

A public liaison officer will be appointed by the Main Contractor to liaise with the local residents on matters relating to noise. Residents will be informed of any noise works scheduled where

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there is the potential to generate high levels of construction noise or if specialist works etc need to be conducted out of the working hours. This person should also be the point of contact for all complaints and be responsible for reviewing the noise monitoring results and exceedances.

**Site Specific Recommendations**

Table 17-1 below outlines the proposed site-specific noise mitigation measures based on the attenuation for each construction phase.

*Table 17-1 Mitigation Required Based on the Construction Noise Predictions*

| Construction Stage | Recommended Noise Mitigation Measures |
|---|---|
| **Site Setup** | Erect a minimum 2.4m high site hoarding that blocks the line of sight between noise source and receiver.<br><br>Example construction for the site hording would be as follows:<br><br>A 2.4m high and 9mm plywood (4.5kg/m2). Barrier must be solid and not contain gaps at the bottom or between adjacent panels<br><br>Local screening using the examples provided in General Recommendations Section 12.8.1.2 are required around hand tools in addition to hoarding.<br>An absorptive lining should be considered for screening around hand tools will need to have an absorptive lining to avoid reflections increasing noise at other receivers.<br>On this project 8 NSL's have been identified it is recommended that a noise monitor should be placed on the boundary of the nearest noise sensitive locations closest to the works i.e. NSL1,5,6,7 and 8 in this case. |
| **Substructure** | Site hoarding to block line of sight. Local screening around noisy plant and equipment. |
| **Superstructure** | Local screening around saws/hammers where possible. Use external new building to screen noise from works where possible. |
| **External Finishes** | Local screening around hand tools. |

#### 17.3.7.1.2 Monitoring

During the construction phase of the Proposed Development, construction noise monitoring should be undertaken to ensure compliance with the relevant guidance.

### *17.3.7.2 Operational Phase*

#### 17.3.7.2.1 Mitigation

Based on the results from the noise impact assessment, the predicted results show compliance with all relevant standards for noise effect at the surrounding noise sensitive receptors. Therefore, no mitigation measures are required for the operational phase of the development.

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#### 17.3.7.2.2 Monitoring

Compliance with derived noise threshold limits outlined in the EIAR Noise Chapter will ensure that no monitoring is required during the operational phase of the Proposed Development.

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## 17.3.8 Landscape and Visual

### *17.3.8.1 Construction Phase*

#### 17.3.8.1.1 Mitigation

During construction, there will be a notable change to the land use and activity on the site, that is likely to generate temporary negative visual impacts for residents in, and visitors to, areas adjacent to the site. All construction works will seek to minimise disturbance to landscape and visual receptors of the site and wider area through the implementation of appropriate measures in line and detailed within the Construction Environmental Management Plan (CEMP).

Measures to be taken include:

- The remedial measures proposed revolve around the implementation of appropriate site management procedures – such as the control of site lighting, storage of materials, placement of compounds, delivery of materials, car parking, etc. Visual impact during the construction phase will be mitigated through appropriate site management measures and work practices to ensure the site is kept tidy, dust is kept to a minimum, and that public areas are kept free from building material and site rubbish.
- The existing trees and hedgerow to be retained through the site will be protected by installation of temporary fencing in accordance with BS5837:2012: Trees in Relation to Construction around the root protection areas (RPAs) as per the protective measures set out in the arborist's Arboricultural Impact Assessment (AIA) & Method Statement and associated drawings.
- Site hoarding will be appropriately scaled, finished and maintained for the period of construction of each section of the works as appropriate. To reduce the potential negative impacts during the construction phase, good site management and housekeeping practices will be adhered to. The visual impact of the site compound and scaffolding visible during the construction phase are of a temporary nature only and therefore require no remedial action other than as stated above.
- The temporary elements of the site works including site hoarding, site compound and construction access routes will be removed as these become no longer required as the construction works progress and the affected land reinstated into the overall design landscape scheme so that there is no remnants of these works evidence within the site.

Adverse impacts during construction will be short-lived and superseded by the completed new development.

#### 17.3.8.1.2 Monitoring

The contract works will be supervised by a suitably qualified landscape architect.

The planting works will be undertaken in the next available planting season after completion of the main civil engineering and building work.

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### *17.3.8.2 Operational Phase*

#### 17.3.8.2.1 Mitigation

The design of the Proposed Development incorporates significant consideration in respect of best practice layouts and for successful integration into the receiving environment. The architectural layout aims to address visual impacts by proposing variety in scale and massing of buildings. Elevations and materiality complement local styles and character.

Landscape measures necessary for the creation of a development of quality are proposed with the effect of also avoiding or minimising adverse effects generated due to the Proposed Development. These landscaping measures, as incorporated into the landscape masterplan and Landscape Strategy & Design Report produced by CSR and included in the support documentation of this application, include:

- Retention of the maximum amount of the existing mature tree cover & hedgerow (7280m²), a crucial part of the overall concept to the landscape scheme, which acts as a strong visual buffer for the development from the Boyne greenway. The combination of this retained vegetation and the proposed new planting will help strengthen the existing wider green infrastructure links and enhance the local biodiversity of the site.
- The proposed planting of substantial tree cover through the site's open space and internal roads will help enhance the Proposed Development and to compensate for the necessary removal of existing hedgerow (198lm) and tree and vegetation (498m²) for the site works.
- Incorporating a mix of native and non-native species throughout the scheme to create a dynamic and resilient landscape and provide pollinator friendly planting for biodiversity.
- Provision of high-quality design of the open spaces which include for the integration of the existing retained woodland boundary vegetation, landscaped SUDs features, and allowing connectivity from the development out to the western end of Drogheda town and the Boyne River walkway.
- Best practice horticultural methods will be applied to ensure that mitigation measures establish and grow appropriately. Landscape tender drawings and specifications will be produced to ensure that the landscape work is implemented in accordance with best practice. This document will include tree work procedures, soil handling, planting and maintenance.

In conclusion, mitigation is adequately delivered as an integral part of the design of the Proposed Development, without the need for further mitigation measures to address residual landscaped and visual effects.

#### 17.3.8.2.2 Monitoring

This will consist of weed control, replacement planting, pruning etc. All landscape works will be in an establishment phase for the initial three years from planting. Any of the installed planting which fails within this initial three years period to be replaced with similar by the appointed landscape contractor. The company or public agency responsible for site management of the scheme will be responsible for the ongoing maintenance of the site after this three-year period is complete.

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### 17.3.9 Archaeology and Cultural Heritage

#### *17.3.9.1 Construction Phase*

##### 17.3.9.1.1 Mitigation

The Proposed Developments will negatively affect the various archaeological features and deposits uncovered within the area of the Proposed Development site, in the course of the testing phase and any other as yet unknown surviving archaeological remains. However, the assessment revealed that these surviving archaeological remains have suffered from significant plough truncation and by and large survive as sub soil cut features.

It is therefore recommended that pre-development mitigation takes place in the form of pre-development archaeological investigations and preservation by record apart from the BA enclosure to the northwest of the Proposed Development site, which will be the subject of a specific targeted mitigation strategy.

In order to address the specific question of potential survival of battlefield archaeology associated with the Battle of the Boyne, it is proposed to undertake a phase of pre-topsoil stripping investigations. In consultation with the battlefield archaeology specialist, a number of sample areas will be selected, across the Proposed Development site, each measuring 40 m by 40 m. These will be located in areas where the specialist considers most likely to produce results, but will potentially be located along the ridge at the north end of the Proposed Development site, overlooking the Boyne and the northeast area of the site overlooking Pass-if-you-can. Both these areas are likely to have been the locations for the deployment of piquets by the Jacobite forces. Additional survey squares may be located elsewhere across the body of the Proposed Development site, particularly along the lines of old field boundaries which may have afforded protected positions in the course of the battle. All the selected areas will be subject to detailed licensed metal detector survey. The precise locations of all ‘hits’ will be surveyed and investigated, with all possible artefacts examined by the attending battlefield specialist. The results of these sample investigations will be discussed with the relevant heritage authorities and may lead to further work, specifically targeted at battlefield archaeology.

In addition, it is recommended that the site should be topsoil stripped under licensed archaeological supervision making sure to include any non-natural sub soil deposits. The monitored area should include appropriate areas of the green space at the northern end of the site as well as the intended path network within the green space. It should also include any works compound areas and topsoil storage areas.

All topsoil should be further examined with the aid of a metal detector, under a separate metal detector licence.

An archaeologist with battlefield archaeology experience should be available for regular consultation to aid in the identification of all metal work recovered in this phase and all additional phases of archaeological works.

The topsoil stripping should be carried out in a pre-construction phase of works, to allow time to undertake any additional archaeological investigations which may be required.

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All topsoil stripping archaeological works should be carried out by mechanical tracked backactor excavators fitted with toothless bucket under the constant supervision of a qualified licensed archaeologist. Despite the lack of certain artefactual evidence uncovered in the 2008 assessment works, it is recommended that, due to the location of the proposal within the wider landscape of the Battle of the Boyne, all topsoil stripping undertaken in association with any developments of the site be further surveyed by a licensed metal detector, assisted by an experienced battlefield archaeologist.

The substantially older architectural elements within the cluster of farm buildings along the eastern boundary of the Proposed Development site are undoubtedly the partial remains of the buildings recorded on Larkin and the first edition OS maps. This indicates that these remains date from at least the early 19th century. Such is the state of disrepair and later modifications of these farm buildings that it is not considered that preservation in situ is appropriate, however, it is recommended that an historic building survey (Level 2), is undertaken in advance of their demolition (Historic England 2006 p26). This should consist of both a written and photographic record, with detailed measured survey drawings where necessary.

In addition, the area around the cluster of buildings should be the subject of targeted pre-development test trenching, to examine the possibility that the cluster extends beyond the buildings currently upstanding and to record the full extent and layout of the buildings.

**The Bronze Age Enclosure MH020-088**

This enclosure is located to the north-west of the Proposed Development site and was uncovered in four separate trenches in the course of the testing undertaken in 2008. It was defined by a 2m wide and an average 550 mm deep U-shaped ditch which was filled with a series of deposits, the lowest of which produced a substantial quantity of sherds of pottery, the form and decoration on which suggests a middle Bronze Age date. Although only the southern half of the site was uncovered in the testing, the projected line would appear to describe a sub-circular enclosure some 70m in diameter. The soil profiles in each of the four test trenches where evidence for the enclosure was found revealed some 500mm of topsoil / ploughsoil over the enclosure. The surface of the ploughsoil varied in height from 23.1m OD at the west end of the enclosure to 21.6m OD on its eastern side.

Although the enclosure is outside the Proposed Development site, there is no physical boundary between it and the western limit of the Proposed Development. In order to avoid any possibility of accidental disturbance to this important archaeological site, it is proposed to protect it in the course of construction works.

In the first instance and before any ground works take place on site, the line of the known feature, which was recorded in the course of the 2008 testing, will be established on the ground. Using this as the starting point a circular area some 70m in diameter will be marked out, defining the projected full extent of the enclosure. Around this a 10m wide buffer zone will be marked out and this will be the line used to erect the protective temporary Heras-type fencing. There will be no ground disturbance associated with the erection or dismantling of the fencing.

The temporary fencing will be erected before any ground works commence and will only be taken down once all groundworks associated with site development are complete. The fenced-

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off area will be a strictly 'no-go' area and will not be used for any reason whatsoever in the course of the development works.

**General Mitigation Recommendations**

All archaeological ground works will be carried out using backactor tracked machines equipped with toothless buckets which are under the constant supervision of a suitably qualified and licensed archaeologist. The archaeologist will monitor the works until either the surface of glacial subsoil, formation level or the surface of archaeological remains is uncovered, whichever is encountered first. Care should be taken to ensure that the topsoil stripping includes 'non-natural' subsoil (possible hillwash) to ensure that any potential archaeological features are exposed in the works. Archaeological works should, if possible be phased in line with the overall phasing of the development programme and if possiblestay one phase, at least, ahead of the construction works, in order to avoid any potential conflicts between archaeology and construction.

It is recommended that all archaeological deposits uncovered during monitoring be recorded and investigated to best archaeological practice. They will in the first instant be cordoned off using high visibility tape and access to these areas by machinery and personnel denied until the deposits have been fully resolved.

The licensed archaeologist on site is responsible, on behalf of the developer, for the identification and appropriate treatment (e.g. excavation and recording) of all archaeological remains encountered. In order to fulfil the responsibilities of the developer therefore, the licensed archaeologist will have the authority to temporarily stop machining where potential archaeological material has been identified, in order to evaluate the character of said remains. It should be possible for work to continue (under archaeological supervision) in areas where no archaeological deposits have been encountered. Should archaeological remains be present, the licensed archaeologist will be responsible for communicating this to the client or appointed representative, as well as to the relevant Heritage Authorities.

In the event of the discovery of any archaeological remains during the monitoring, the deposits will be hand excavated to assess their nature date and extent and time will be allowed for the archaeologist to undertake the appropriate level of recording. The level of recording will depend on the complexity of the archaeological remains encountered and, in all cases, sufficient time will be allowed by the developer for this purpose.

If human remains, or any suspected grave cuts, are observed, machine excavation will cease, the statutory authorities and development sponsor will be informed immediately and a suitable methodology for dealing with the human remains or grave cuts will be agreed in writing with the heritage authorities. Work will not recommence in the area containing the human remains until such a methodology has been agreed, and all works subsequently undertaken in this area will be in accordance with this methodology.

During all archaeological works, recording will be by means of the standard methods employed during archaeological fieldwork. A day book will be maintained while all archaeological features will be recorded in writing utilising pro forma context sheets by means of scaled field illustrations and by appropriate photography.

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It is recommended that the developer allow enough time in the development programme for any archaeological excavations. It should be noted that the results of all excavation including site evaluation and monitoring, must be compiled into a fully illustrated report.

In the course of the archaeological works all finds will be logged according to context, washed (if appropriate), bagged and catalogued prior to dispatching to the various specialists. A contract conservator will be on hand if necessary. All artefacts will be numbered and treated in accordance with National Museum guidelines and will be processed to a standard acceptable for deposition to the State's Cultural Resource Centre in Swords, Co. Dublin.

As with the finds, the site archive will also be processed to a standard acceptable for deposition to the State's Cultural Resource Centre in Swords, Co. Dublin.

A comprehensive final archaeological report will be compiled that will set out the results of the archaeological works in accordance with the terms of the National Monuments Acts and best professional practice. It will address the archaeological and historical background of the site. The location and levels (corrected to Ordnance Datum) of any archaeological deposits found will be clearly shown.

#### 17.3.9.1.2 Monitoring

The mitigation measures recommended above, including the monitoring of works by qualified archaeologists would support effective monitoring during construction to allow the further assessment of the scale of the predicted effects and the effectiveness of the recommended mitigation measures.

### *17.3.9.2 Operational Phase*

#### 17.3.9.2.1 Mitigation

The main concern within the operation phase is that of adverse visual impacts, from the various vantage points associated with the Battle of the Boyne and the views from the World Heritage Site. (See chapter 11 Landscape and Visual Impact in this regard).

It is recommended that the proposed planting design for the development should establish tree and shrub-lined boundaries to the north and south and add to the existing tree lined boundary to the west utilizing an appropriate variety of native species. (See the Landscape Strategy and Design chapter in this regard).

It is also recommended that trees and shrubs should form an important element within the boundaries of the Proposed Development site, to soften the hard lines which will result in the construction of the buildings and associated road network within the development (See chapter 11 Landscape and Visual Impact in this regard).

#### 17.3.9.2.2 Monitoring

No monitoring is required during the post-development phase of works.

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### 17.3.10 Materials Assets – Traffic

#### *17.3.10.1 Construction Phase*

##### 17.3.10.1.1 Mitigation

- The main contractor as part of their site set up arrangements, shall appoint a Coordinator responsible for the implementation of a Construction Stage Mobility Management Plan and shall carry out the following tasks as part of its role:
    - Encourage staff to avoid using of their cars and use alternative modes of transport in order to reduce the number of cars on the road and the need of car parking spaces.
    - Provide an extensive information service for public transport options and routes at a public location(s) within the development for construction workers.
    - Update the public transport information adjacent to the development on an ongoing basis.
    - Advise company staff of tax incentives for public transport and bicycles.
- A limited number of car parking spaces may be provided for senior construction managers within the development site. Suitable locations in the surrounding area may be identified where staff can park and link to public transportation.
- For those wishing to cycle to and from the site, dedicated cycle parking will be provided for the duration of the works within the site. Shower facilities and lockers will also be provided.
- A detailed Construction and Traffic Management Plan will be prepared by the contractor and agreed with the Local Authority before commencing works on site, which must describe the following:
    - Dedicated construction haul routes, which will be identified and agreed upon with the local authority before the commencement of construction activities on site.
    - A dedicated “construction site”’ access/egress system to be implemented during the construction phases.
    - Manage the entry and exit of heavy vehicles to and from the site. The assignment of staff to assist pedestrians and traffic flow when heavy vehicle movements occur on the roads.
    - Define schedules for the entry and exit of materials and machinery to limit the generation of noise on the network to specific time slots.
- Adequate signposting will be located on-site to ensure the safety of all road users and construction workers.
- All heavy vehicles transporting solid materials must ensure that the load is properly covered to prevent dust dispersion onto the road.
- All vehicles should wash their wheels, when necessary, when leaving the site to prevent dust being thrown onto the road.
- Hoarding will be set up around the perimeter to prevent pedestrian access.
- A material storage zone will also be provided in the Construction Compound area. This storage zone will include material recycling areas and facilities.

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- The contractor will be obliged to ensure that any sub-contractors engaged on the site are made fully aware of the required mitigation measures and that they are properly implemented as part of any works that they undertake.

The coordinator responsible for the implementation of a Construction Mobility Management Plan will carry out the following (which is a non-exhaustive list):

- Encourage staff to avoid using of their cars and use alternative modes of transport in order to reduce the number of cars on the road and the need of car parking spaces.
- Provide an extensive information service for public transport options and routes at a public location(s) within the development for construction workers.
- Update the public transport information adjacent to the development on an ongoing basis.
- Advise company staff of tax incentives for public transport and bicycles. For those wishing to cycle to and from the site, dedicated cycle parking will be provided for the duration of the works within the site. Shower facilities and lockers will also be provided.

The following must be noted and implemented during the construction stage:

Measures to Minimise Nuisance

The measures, which are proposed to be operational at this site will include:

- Use of a properly designed access and egress to minimise the effects on both external traffic and local amenity.
- Check on each arriving and departing vehicle at the site entrance from the public street.
- Use of banksman, where necessary, to control exit of construction vehicles onto public road.
- Issue of instructions and maps clearly setting out the construction traffic route to the site to each sub-Contractor to ensure that all contractors are clearly briefed on the route to/from the site.
- Ongoing assessment of the route for construction traffic to and from the site and prompt action when issues are identified.
- Working hours of 08h00-19h00 Monday – Friday and 09h00-13h00 Saturday or as otherwise may be agreed with Meath County Council.

Site Control Measures

The designated and operational on-site control measures, which will be established and maintained at this site, will include:

- Designated hard routes and appropriate signage will be provided throughout the site to ensure the safety of all road users and construction workers.
- Each departing vehicle to be checked by banksman.
- All heavy vehicles spilling solid material on the road must cover the material to prevent dust being thrown onto the road.
- All vehicles should wash their wheels, as necessary, at egress point.
- Hoarding will be set up around the perimeter to prevent pedestrian access.

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- A material storage zone will also be provided in the Construction Compound area. This storage zone will include material recycling areas and facilities.
- Facility to clean local roads if mud or spillage occurs.
- The contractor will be obliged to ensure that any sub-contractors engaged on the site are made fully aware of the required mitigation measures and that they are properly implemented as part of any works that they undertake.

Control of Noise

Site deliveries will be confined to working hours and an allocated offloading location will be utilized for all deliveries. Measures for the control and monitoring of noise and vibration during construction, including measures to mitigate noise are indicated below:

- Ensure all vehicle movements (on site) occur within normal working hours. (Other than where extension of work requiring such movements has been granted in cases of required road closures or for health and safety reasons).
- Plan deliveries and vehicle movements so that vehicles are not waiting or queuing on the public highway, if unavoidable engines should be turned off.
- Plan the site layout to ensure that reversing is kept to a minimum.
- Where reversing is required use broadband reverse sirens or where it is safe to do so disengage all sirens and use banksmen.
- Rubber/neoprene or similar non-metal lining material matting to line the inside of material transportation vehicles to avoid first drop high noise levels.
- Wheel washing of vehicles prior to exiting the site shall take place to ensure that adjoining roads are kept clean of dirt and debris. Regular washing of adjoining streets should also take place as required by road sweepers.

#### *17.3.10.2 Operational Phase*

##### 17.3.10.2.1 Mitigation

A Mobility Management Plan will be implemented and developed on an ongoing basis with the triple objectives of promoting sustainability, enhancing public transport, and reducing dependency on the use of the private car.

This Mobility Management Plan focuses primarily on intangible measures such as promotion, marketing and events. A significant proportion of the measures included in this section are low cost but highly visible and contribute to creating a culture of sustainability within the organisation.

Consequently, the proposed Mobility Management Plan comprises a series of measures designed to encourage more sustainable travel habits among residents and visitors. In addition, the plan is designed to address the typical day-to-day operational requirements at the site. The implementation and management of the plan will be overseen by a Coordinator.

The developer will appoint a Mobility Management Plan coordinator or management company to oversee the development of the plan. The latter will appoint a senior member of staff as Mobility Management Plan Coordinator.

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The Mobility Management Plan Coordinator will represent the philosophy of the plan and act as a coordinator for the proper functioning of the plan. The coordinator shall be appointed within two months of the site being occupied. The Mobility Management Plan Coordinator's responsibilities shall include:

- Implementing and maintaining the plan.
- Monitoring the progress of the plan.
- Liaising with internal stakeholders, and external public transport operators, planning and government authorities.
- Producing information reports for the developer, employees, visitors, clients and government authorities.
- Ongoing evaluation of the Plan's objectives.

The Mobility Management Plan Coordinator will be responsible for the creation and maintenance of up-to-date travel information boards for residents/students and/or Mobility Plan's mobile app and/or a website. The travel information boards will be installed in strategic locations, where residents will have access to a variety of resources, including travel information, timetables, internet access, and notice boards.

In addition to the above responsibilities, the Mobility Management Plan Coordinator must also undertake the following activities:

- Local Policies Review with the aim of understanding their impact on the daily resident travel patterns
- Site Audit considering the following guidance:
    - Public Transport service: considering the location of the bus stops and the train stations, the route which is served and the frequency of services passing through the bus stop or train station.
    - Pedestrian and cycle accessibility: this should include an assessment of the local cycling and walking environment from the Proposed Development to the various public transport stops. This assessment must consider the current conditions and , where necessary, identify areas for improvement.
    - Road condition: considering the traffic condition and if there is congestion near the site.
    - Car parking spaces near to the site: A survey of the car parking facilities in the vicinity of the site will provide an indication of the potential parking areas, if employees and visitors do not have sufficient space within the site's car park. The survey must consider the volume and usage of the parking spaces, their location, quality and quantity, and the relationship between these factors and the demand for parking spaces. It must also consider any management issues that may arise.
    - Facilities' location: it is important for employees and visitors to be aware of the location of the primary shops, as well as the relative distance to the site. The distance should be provided in metres and in travel time, either walking or cycling.

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- Residents Travel Survey: This can be achieved by means of self-completion questionnaires, which will help to identify travel requirements and set targets and needs. The information requested in the questionnaire should include:
    - Basic Personal information (age, household size, car ownership, occupation)
    - Primary mode of transport.
    - Current travel patterns including the time taken to/from the Proposed Development to/from their destination.
    - It is also necessary to find out the views of workers and visitors on alternative modes of transport to the car, in order to identify the factors that would encourage them to switch to other modes. Furthermore, it is important to encourage the use of car-sharing schemes.
- Promoting the Mobility Management Plan: the Mobility Management Coordinator to provide all new residents with a Mobility Pack (or Travel Pack). The mobility pack should include:
    - The Mobility Management Plan.
    - Public transport information, including bus and rail routes and frequencies.
    - The benefits of the Mobility Management Plan for residents and visitors.
    - Details of tax incentives available, such as the Bike to Work Scheme, the Tax Saver Scheme for public transport tickets, etc.
    - A travel survey form.
    - Details of pedestrian and cycle facilities.

**Action Plan**

Walking

It is well documented that there are numerous benefits to walking to and from a destination on a daily basis. The Proposed Development is situated within an area characterised by a wider range of land uses that are accessible by walking. The surrounding area is characterised by a variety of land uses, a food discount store, a primary school, and a secondary school.

It is proposed that residents be encouraged to reduce the use of the car for short journeys and indeed choose to walk to the nearest bus stops, grocery store, and to commute to their place of work, school, or college. For that, the connection of footpaths within the Proposed Development with those existing will allow people to establish connections beyond the development itself.

The Mobility Management Coordinator will provide maps of the local area, which will show walking routes, local facilities, and distances with health information. This information will be displayed on the information board and/or the Mobility Plan mobile app and/or via a specific website; in order to assist residents and visitors understand the importance of choosing this mode of transportation over the automobile.

This communication tool will be developed to encourage residents to meet and walk together, fostering a sense of community between them. Furthermore, children enrolled in local schools will be encouraged to walk to school on a daily basis, thus reducing the number of private vehicles on the road.

Cycling and cycle parking

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Cycling is an effective mode of transport, promoting independence and sustainable travel and allowing for shorter distances to various facilities.

The Proposed Development is located in close proximity to a variety of amenities and employment areas, grocery stores, health care centres and shopping centres.

To facilitate the storage and maintenance of bicycles within the development, cycle parking has been provided in accordance with local guidelines and standards, as indicated in Section 13.4.2. House units are provided with access to their rear garden, offering the opportunity for secure bicycle storage. Therefore, it is not considered necessary to provide additional external bicycle storage facilities.

The Mobility Management Coordinator will provide maps of the local area, indicating cycle routes, local facilities, and distances with health information. This information will be displayed on the information board and/or the Mobility Plan mobile app and/or via a specific website; in order to assist residents and visitors understand the importance of choosing this mode of transportation over the automobile.

Furthermore, the Mobility Management Coordinator will inform residents of future development of cycle infrastructure.

If there is a genuine interest in bicycle maintenance, public courses on the use, maintenance, repair, and improvement of bicycles may be proposed.

Additionally, residents are encouraged to avail themselves of the government's Cycle to Work scheme, which may be available through their employers. Moreover, a fleet of hire bikes may be provided, which can be used to attend meetings or to test cycling to and from work before making a purchase.

Private and shared cars

Every day, thousands of commuters drive to work on the same routes to the same destinations at the same time as their colleagues. If every driver carried another driver, there would be 50% fewer cars on the road at peak times. There are numerous advantages to utilising sharing services for commuting purposes, including a reduction in carbon emissions, fuel costs and parking fees, as well as a reduction in congestion and journey times due to a reduction in the number of vehicles on the road. Additionally, the experience of the journey is enhanced due to a reduction in congestion and the presence of company.

Car sharing is a particularly attractive travel option for those living in areas with long distances or poor public transport connections. The Mobility Management Coordinator will encourage communication between different drivers by promoting the use of the information board and/or the Mobility Plan mobile app and/or a dedicated website, to facilitate the establishment of these car-sharing schemes. Furthermore, if the number of drivers is important, it may be beneficial to designate specific parking spaces in prime locations for carsharers only.

Strategy for public transport use

- Promote Tax Saver Commuter tickets

The TaxSaver Commuter Ticket Scheme is a cost-reduction initiative for public transport. It offers employers the opportunity to make PRSI savings of up to 10.75%. Residents can also

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benefit from savings on their travel costs, with savings of between 28.5% and 52% possible due to tax, PRSI and USC savings. The ticket covers bus, rail, and the Luas system.

The scheme is open to residents who wish to participate. They can discuss the matter with their employer, who will then apply for and purchase the ticket on their behalf.

The TaxSaver scheme is managed in conjunction with the Revenue Commissioners by the following transport providers:

- Dublin Bus
- Bus Éireann
- Luas
- Irish Rail
- Approved transport providers

Residents may obtain tickets as part of their salary package (salary sacrifice) in lieu of an annual cash bonus or as a benefit-in-kind. TaxSaver tickets are not subject to tax, PRSI or USC. It is important to note that residents are only liable to pay tax, PRSI, and USC on the portion of their salary that represents the actual remuneration. In addition, the employer is also responsible for calculating PRSI on the same basis.

The Mobility Management Plan Coordinator will be responsible for disseminating this information to the residents of the Proposed Development, thereby affording them the opportunity to request this benefit at their place of employment.

- Update travel information

The Mobility Management Plan Coordinator will provide maps of the local area, indicating the nearest bus stop and train stations and the distance between the Proposed Development and these points. Additionally, the Mobility Management Plan Coordinator will provide updated local train and bus maps and timetables.

This information will be displayed on the information board and/or the Mobility Plan mobile app and/or via a specific website; in order to assist residents and visitors understand the importance of choosing this mode of transportation over the automobile.

Furthermore, the Mobility Management Plan Coordinator will inform residents of future plans for the development of public transport routes in the area.

Residents of the area will be informed about online public transportation information systems, their use and the advantages that this entails.

- Monitoring of the Public Transport service

It is the responsibility of the Mobility Management Plan Coordinator to conduct regular assessments of the public transport service in order to ascertain the quality of the service provided. In order to ensure the provision of high-quality public transport services, the coordinator must consider a number of factors, including fare, travel time, vehicle conditions, and frequency.

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The Mobility Management Plan Coordinator may also engage in lobbying activities with the public transport operators in order to ensure the continued provision of a high level of service on the public transport routes serving the development.

#### 17.3.10.2.2 Monitoring

The responsibility for monitoring and reviewing the Plan will be borne by the Mobility Management Plan Coordinator. The principal indicators that will be subject to monitoring are as follows:

- Changes in modal split – both 'usual' and 'occasional' modes used.
- Cycle Parking on site: Include the state of the bike racks and that there are no abandoned bikes without owners.
- Bikes purchase through the Cycle to Work scheme.
- Number of car parking permits issued.
- Number of registered carsharers.
- Others that may be important.

An initial travel survey should be carried out by the Mobility Management Plan Coordinator. Once the travel survey has been completed and analysed, the Mobility Management Plan Coordinator will agree annual targets with the main stakeholders (the developer, the occupier(s), the Local Authority, or its agents, etc.) for increasing the percentage of non-car modes of transport.

It is recommended that the Mobility Management Plan Coordinator meet with the stakeholders, officers of the Local Authorities or its agents within six months of the occupation of the building(s) and thereafter every twelve months to assess and review progress of the Plan and agree objectives for the next twelve months.

As a consequence of the evaluation, the following potential outcomes may emerge:

- The objectives have been achieved, and no further intervention is deemed necessary to ensure alignment with existing local development plans.
- The objectives have not been fully achieved, necessitating the implementation of corrective measures that, due to their scale, can be managed by the Transport Coordinator.
- Large measures: the results are found to be significantly divergent from the stated objectives, which may necessitate the engagement of external consultants to develop the requisite mobility studies and implement the measures deemed necessary to realign the development with the originally stated objectives.

It is recommended that the Mobility Management Plan Coordinator prepare and submit to senior management of the Developer, the residents and the Local Authorities or its agents an annual Monitoring Report.

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### 17.3.11 Materials Assets – Waste and Utilities

#### *17.3.11.1 Construction Phase*

##### 17.3.11.1.1 Mitigation

**Surface Water**

Specific avoidance, remedial and mitigation measures to be taken during the construction phase with respect to surface water drainage are detailed within Chapter 7 Hydrology and Hydrogeology of this EIAR. All works will be carried out in accordance with the Construction and Environmental Management Plan prepared for the Proposed Development and the Irish Water Code of Practice for Water Infrastructure (July 2020) and the Irish Water Code of Practice for Wastewater Infrastructure (July 2020). The construction of any watermains infrastructure will be in accordance with UÉ standards.

The SSFRA submitted as part of this application, also informs the surface water strategy and mitigation measures.

**Wastewater Drainage**

Specific avoidance, remedial and mitigation measures to be taken during the construction phase with respect to foul water are detailed within Chapter 7 Hydrology and Hydrogeology of this EIAR. All works will be carried out in accordance with the Construction and Environmental Management Plan prepared for the Proposed Development and the Irish Water Code of Practice for Water Infrastructure (July 2020) and the Irish Water Code of Practice for Wastewater Infrastructure (July 2020). The construction of any wastewater infrastructure will be in accordance with UÉ standards.

Further detail on foul drainage infrastructure and connection feasibility is provided in the Engineering Assessment Report, submitted with this application.

**Water Supply**

Confirmation of Feasibility has been received by UÉ. Utilities providers will be responsible for the management and any required upgrades of water supply and as such no mitigation measures are required.

Details of the proposed water supply connection and infrastructure are outlined in the Engineering Assessment Report.

**Electricity**

New connections for electricity supply will be coordinated with the relevant utility provider and Meath County Council and will be carried out and tested by approved contractors, as per standard protocols and as such no mitigation measures are required.

**Gas**

There is no gas supply proposed and as such no mitigation measures are required.

**Telecommunications**

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Any new connections required for telecommunications will be coordinated with the relevant utility provider and Meath County Council and will be carried out and tested by approved contractors, as per standard protocols and as such no mitigation measures are required.

**Waste**

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

- Waste materials will be separated at source and will follow the Resource and Waste Management Plan (RWMP) and Contractor(s) Construction Environmental Management Plan (CEMP);
- Prior to the commencement of the construction phase detailed calculations of the quantities of topsoil, subsoil and green waste will be prepared, and soils will be tested to confirm they are clean, inert or non-hazardous;
- A policy of 'as needed' ordering and strict purchasing procedures will be implemented to prevent waste arising as far as possible;
- The Contractor will vet the source of aggregate, fill material and topsoil imported to the site in order to ensure that it is of a reputable origin and that it is "clean" (i.e., it will not contaminate the environment).
- The Contractor and/or Council will implement procurement procedures to ensure that aggregate, fill material and topsoil are acquired from reputable sources with suitable environmental management systems and that conform to all regulatory and legal compliance standards;
- The waste materials generated during the construction phase will be stored in suitably sized receptables and transferred offsite for appropriate processing, recycling and recovery;
- Waste materials generated from the construction phase that are unsuitable for reuse or recovery will be separately collected;
- Disposal of construction generated wastes will be considered a last resort and only after recycling or recovery options have been ruled out;
- A suitably competent and fully permitted waste management company will be employed to manage waste arising for the construction phase. The appointed waste contractor must have the relevant authorisations for the collection and transport of waste materials, issued by the National Waste Collection Permit Office (NWCPO);
- All waste materials will be transported to an appropriately authorised facility, which must have the relevant authorisations for the acceptance and treatment of the specific waste streams, i.e., a Certificate of Registration (COR) or a Waste Facility Permit (WFP) as granted by a Local Authority, or a Waste/Industrial Emission Licence as granted by the Environmental Protection Agency;

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- It is not envisaged that there will be any hazardous waste generated throughout the construction works however, in the event that hazardous soil, or historically deposited waste is encountered during the site bulk excavation phase, the contractor will notify Meath County Council and provide a Hazardous / Contaminated Soil Management Plan, to include estimated tonnages, description of location, any relevant mitigation, destination for disposal/treatment, in addition to information on the authorised waste collector(s). Only authorised facilities will be used and as a result of this, the potential effects at any authorised receiving facility sites will have been adequately assessed and mitigated as part of the statutory consent procedures;
- All identified asbestos-containing materials (ACMs) will be removed and disposed of by a competent asbestos removal contractor in accordance with the Safety, Health and Welfare at Work (Exposure to Asbestos) Regulations 2006 to 2010. The appointed contractor will be responsible for determining whether a 14-day statutory notification is required and for preparing a plan of work for the safe removal and disposal of ACMs prior to any demolition or construction works likely to cause disturbance;
- Waste generated by construction workers will be stored in wheelie bins on site and it will be collected by an appropriately authorised waste collector. All waste generated on site will be sent for recycling, recovery, or disposal to a suitably licensed or permitted waste facility; and
- All waste quantities and types will be recorded and quantified, and records will be retained onsite for the duration of the construction phase.

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

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

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

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#### 17.3.11.1.2 Monitoring

The site control measures to manage and minimise waste include:

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

During the construction phase, a procedure for waste auditing will be in place as per the RWMP which has been prepared for the planning application and is submitted under separate cover. The purpose of the waste auditing is to identify any problems with the site's waste procedures and also the benefits of prevention and minimisation that is in place. The audit will be a 'self-audit' process carried out by the Resource Manager and/or appointed team member/contractor. The RM will create an Audit Plan and identify the appropriate frequency at which the audits are to be conducted over the course of the construction phase. The waste audit will document details of the quantity, type and composition of all waste removed from the site. The audit findings will highlight any corrective actions that may need to be taken in relation to waste management procedures or site practices. These corrective actions will be tracked in order to identify root-causes as appropriate (DNV, 2025).

### *17.3.11.2 Operational Phase*

#### 17.3.11.2.1 Mitigation

**Surface Water**

The operational phase of the Proposed Development presents limited potential for discharge of contaminated runoff to receiving watercourses. Based on the design of the Proposed Development there are limited potential sources of contamination during the operational phase. Surface water will be managed in accordance with the principles and objectives of SuDS and the GDSDS to ensure effective treatment and attenuation prior to off-site discharge.

The SuDS design incorporates the following measures:

- Water butts – utilised within each residential unit;
- Permeable pavement;
- Swales – utilised in grass verges alongside internal roads;
- Grass detention basin – aboveground located at the green open space areas;
- Flow control device (e.g. hydrobrake) – installed at the outfall manhole of each catchment; and
- Petrol interceptor – installed downstream of each flow control device manhole.

Ongoing regular operational monitoring and maintenance of drainage and the SuDS measures will be incorporated into the overall management strategy for the Proposed Development. This will ensure that there are no effects on water quality and quantity (flow regime) during the operational phase of the Proposed Development.

No bulk storage of petroleum hydrocarbon-based fuels is proposed during the operational phase, as heating will be provided via space heating and heat pumps.

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Ongoing monitoring and maintenance of the drainage and SuDS systems will be incorporated into the site's operational management strategy to ensure continued effectiveness and compliance with water quality and quantity objectives.

Following the planning application stage, connection agreements will be secured with UÉ to confirm water supply and foul water discharge arrangements. No additional mitigation measures are required beyond those embedded in the design.

**Wastewater Drainage**

Due to the incorporated design measures relating to foul/wastewater, no additional mitigation measures are required. Following the planning application stage, connection agreements will be secured with UÉ to confirm water supply and foul water discharge arrangements. No additional mitigation measures are required beyond those embedded in the design.

**Water Supply**

Confirmation of Feasibility has been received by UÉ. Utilities providers will be responsible for the management and any required upgrades of water supply and as such no mitigation measures are required.

**Electricity**

Utilities providers will be responsible for the management and any required upgrades of electricity supply and as such no mitigation measures are required.

**Gas**

There is no gas supply proposed and as such no mitigation measures are required.

**Telecommunications**

Utilities providers will be responsible for the management and any required upgrades of telecommunications and as such no mitigation measures are required.

**Waste**

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

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

As outlined in the OWMP, it is intended to ensure that the highest possible levels of waste reduction, waste reuse and waste recycling are achieved for the Proposed Development.

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Specifically, the OWMP will aim to achieve waste prevention, maximum recycling and recovery of waste with a focus on diversion of waste from landfill wherever possible.

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

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

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

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

Responsibilities outside the remit of the Management Company, such as enforcement of individual resident compliance with waste segregation or illegal dumping, will remain under the jurisdiction of the relevant local authority or enforcement body.

Contingency policies will be in place to ensure continuity of service.

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

The OWMP has reviewed policy alongside best practice guidance and recommendations for sustainable waste and recycling management arrangements for the Proposed Development and ensures a high level of recycling, reuse and recovery at the development and also ensures that waste management is carried out in accordance with the requirements of the Meath County Council Development Plan 2021-2027 and Ireland's National Waste Policy.

#### 17.3.11.2.2 Monitoring

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

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areas for waste storage will provide sufficient room for the required receptacles in accordance with the details of this strategy.

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## About DNV

DNV is the independent expert in risk management and assurance, operating in more than 100 countries. Through its broad experience and deep expertise DNV advances safety and sustainable performance, sets industry benchmarks, and inspires and invents solutions.

Whether assessing a new ship design, optimizing the performance of a wind farm, analyzing sensor data from a gas pipeline or certifying a food company's supply chain, DNV enables its customers and their stakeholders to make critical decisions with confidence.

Driven by its purpose, to safeguard life, property, and the environment, DNV helps tackle the challenges and global transformations facing its customers and the world today and is a trusted voice for many of the world's most successful and forward-thinking companies