DUNBOYNE LRD

VOLUME I

Non-Technical Summary

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CHAPTER 1 | Introduction

The Environmental Impact Assessment Report (EIAR) sets out the results of the environmental assessments which have been completed for the proposed development to inform the planning consent process.

Article 5(1)(e) of the EIA Directive requires the project proponent to include a Non-Technical Summary (NTS) of the Environmental Impact Assessment Report (EIAR) and it is transposed into Irish law under article 94(c) of the Planning and Development Regulations 2001, as amended.

The term 'non-technical' indicates that this summary should not include technical terms, detailed data and scientific discussion, that detail is presented in Volume II, the EIAR.

This Non-Technical Summary provides a concise, but comprehensive description of the Project, its existing environment, the effects of the project on the environment, the proposed mitigation measures, and the proposed monitoring arrangements, where relevant. The NTS highlights any significant uncertainties about the project. It explains the development consent process for the Project and the role of the EIA in that process.

It is important to highlight that the assessments that form part of the EIAR were undertaken as an iterative process rather than a one-off, post-design environmental appraisal. Findings from the individual assessments have been fed into the design process, resulting in a project which achieves a 'best fit' within the environment.

1.1 Characteristics of the Proposed Development

A full description of the proposed development is provided in Chapter 2 Project Description. In summary, the proposed development will consist of the construction 356 no. residential units, a creche, and all associated ancillary development works.

Figure 1 Application Site

1.2 Report Structure

The EIAR has been prepared according to the 'Grouped Format Structure'. This means that each topic is considered as a separate section and is drafted by the relevant specialists.

The EIAR is divided into three volumes as follows:

- Volume 1: Non-Technical Summary
- Volume 2: Main Environmental Impact Assessment Report
- Volume 3: Appendices

Volume 1, the Non-Technical Summary (NTS), provides an overview of the project and the EIAR in non-technical terms. The summary is presented similar to the grouped format structure and discusses each environmental topic separately.

Volume 2, the main EIAR, provides the detailed information on the proposed development and the relevant environmental topics, with technical and detailed investigations of the topic areas as appropriate. This volume is prepared in the grouped format structure as it allows specialist studies to be completed for environmental topics in chapters.

Volume 3, the Appendices, contains supporting documentation and information on the EIAR.

1.3 Screening for Environmental Impact Assessment

Development which falls within one of the categories specified in Schedule 5 of the Planning and Development Regulations 2001, as amended, which equals or exceeds, a limit, quantity, or threshold prescribed for that class of development must be accompanied by an EIAR.

The proposed development falls within the class of development types requiring an EIA under Schedule 5 of the Planning and Development Regulations 2001 (as amended). The proposed development is subject to Part 2 of this Schedule (Section 10) which deals with infrastructure projects where EIA is required for:

> *10. b (iv) Urban development which would involve an area greater than 2 hectares in the case of a business district, 10 hectare 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).*

The proposed project comprises the construction of 356 no. residential units, on a gross site area of c. 17.22ha. An EIAR is therefore required as the LRD comprises urban development on a site area that exceeds the 10ha threshold for a mandatory EIAR.

1.4 EIAR Team Competency

It is a requirement that the EIAR must be prepared by competent experts. For the preparation of this EIAR, the Applicant engaged McCutcheon Halley Chartered Planning Consultants to direct and coordinate the preparation of the EIAR and a team of qualified specialists were engaged to prepare individual chapters. The consultant firms and lead authors are listed in **Table 1**. Details of competency, qualifications, and experience of the lead author of each discipline is outlined in the individual chapters.

Table 1 Chapters of EIAR & Contributors

Chapter	Aspect	Consultancy	Lead Consultant
1	Introduction	McCutcheon Halley Planning Consultants	Saoirse Kavanagh
2	Site Location and Project Description	McCutcheon Halley Planning Consultants	Saoirse Kavanagh
3	Project Need and Alternatives Considered	JFA	Deirdre Hargaden
4	Population & Human Health	McCutcheon Halley Planning Consultants	Saoirse Kavanagh
5	Land, Soils, & Geology	AWN Consulting	Rashaqat Ali Siddiqui and Marcelo Allende
6	Hydrology & Hydrogeology	AWN Consulting	Rashaqat Ali Siddiqui and Marcelo Allende
7	Air Quality	AWN Consulting	Ciara Nolan
8	Climate Change	AWN Consulting	Ciara Nolan
9	Noise & Vibration	AWN Consulting	Alistair Maclaurin
10	Waste	AWN Consulting	Chonaill Bradley and Elaine Neary
11	Landscape & Visual	JBA Consulting	Christos Papachristou, Jamie McDonald
12	Material Assets: Traffic & Transport	Atkins	Nicholas van den Berg
13	Material Assets: Service Infrastructure & Utilities	Paul McGrail Consulting Engineers	Paul McGrail
14	Biodiversity	DNV	Liam Gaffney
15	Cultural Heritage & Archaeology	John Cronin & Associates	John Cronin, Camilla Brännström and Tony Cummins
16	Significant Interactions of Impacts	McCutcheon Halley Planning Consultants	Saoirse Kavanagh
17	Summary of Mitigation Measures	McCutcheon Halley Planning Consultants	Saoirse Kavanagh
18	Screening for Major Accidents	McCutcheon Halley Planning Consultants	Saoirse Kavanagh

1.5 Methodology

In preparing the EIAR the following regulations and guidelines were considered:

- The requirements of applicable EU Directives and implementing Irish Regulations regarding Environmental Impact Assessment, as cited in section 1.5above;
- Environmental Impact Assessment of Projects Guidance on the preparation of the Environmental Impact Assessment Reports (European Commission, 2017)
- Guidelines on the Information to be Contained in Environmental Impact Assessment Reports (Environmental Protection Agency, May 2022).
- Guidelines on Information to be Contained in Environmental Impact Statements (EIS) (Environmental Protection Agency, 2002)
- Guidelines for Planning Authorities and An Bord Pleanála on carrying out Environmental Impact Assessment (Department of Housing, Planning and Local Government, 2018).

In addition, contributors have had regard to other relevant discipline-specific guidelines, these are noted in individual chapters of the EIAR.

Each chapter of this EIAR assesses the direct, indirect, cumulative, and residual impact of the proposed development for both the construction and operational stage of the proposed development.

The identified quality, significance, and duration of effects for each aspect is primarily based on the terminology set out in the EPAs Guidelines on the information to be contained in Environmental Impact Assessment Reports (2022) as summarised in the following table:

Table 2 Impact Rating Terminology

Quality of Effects	
Positive	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	No effects or effects that are imperceptible, within normal bounds of variation or within the margin of forecasting error.
Negative/ Adverse Effects	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).
Significance of Effects	
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 most of a sensitive aspect of the environment.
Profound Effects	An effect which obliterates sensitive characteristics.

Duration & Frequency of Effects	
Momentary Effects	Seconds to minutes
Brief Effects	Less than 1 day
Temporary Effects	Less than 1 year
Short-term Effects	1-7 years
Medium-term Effects	7-15 years
Long-term Effects	15-60 years
Permanent Effects	Over 60 years
Reversible Effects	Effects that can be undone, for example through remediation or restoration.
Frequency of Effects	Describe how often the effect will occur (once, rarely, occasionally, frequently, constantly – or hourly, daily, weekly, monthly, annually).
Extent & Context of Effects	
Extent	Describe the size of the area, the number of sites, and the proportion of a population affected by an effect.
Context	Describe whether the extent, duration, or frequency will conform or contrast with established (baseline) conditions (is it the biggest, longest effect ever?)
Probability of Effects	
Likely	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.
Type of Effects	
Indirect Effects	Impacts 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 significant 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	The 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.
Synergistic Effects	Where the resultant effect is of greater significance than the sum of its constituents, (e.g. combination of SOx and NOx to produce smog).

1.6 Consultation

The following prescribed bodies have been consulted in relation to the general scope of the EIAR.

- Department of Housing, Local Government, and Heritage
- Department of Tourism, Culture, Arts, Gaeltacht, Sport & Media
- Department of Education
- Geological Survey Ireland (Department of the Environment, Climate and Communications)
- The Heritage Council
- Office of Public Works (OPW)
- Transport Infrastructure Ireland (TII)
- The National Transport Authority (NTA)
- The Health and Safety Authority (HSA)
- The Health Service Executive (HSE)
- Inland Fisheries Ireland
- Bat Conservation Ireland
- Uisce Éireann
- An Taisce
- Bord Gais
- ESB
- Environmental Protection Agency
- Fáilte Ireland

Responses received are presented in Appendix 1.1

CHAPTER 2 | Site Location & Project Description

According to the EIA Directive, an EIAR must provide a project description that includes information on the project's site, design, scale, and other relevant elements. The 2014 Directive stipulates in Recital 22 that:

> *"In order to ensure a high level of protection of the environment and human health, screening procedures and environmental impact assessments should take account of the impact of the whole project in question, including, where relevant, its subsurface and underground, during the construction, operational and, where relevant, demolition phases".*

Chapter 2 of Volume II complies with the EIA Directive's criteria by giving information about the proposed project's location, size, and features. This chapter of the EIAR has been prepared by Saoirse Kavanagh, Executive Planning Consultant of McCutcheon Halley Planning Consultancy.

2.1 Description of Existing Environment

The subject site is located within the townland of Bennetstown to the north of, and within the defined development boundary, of Dunboyne.

The lands surrounding the subject site consist primarily of agricultural lands. The M3 Parkway Station to the east of the site provides a large surface car park adjacent to the train station.

The boundaries of the site consist of hedgerows and there is an existing hedgerow through the centre of the site.

The red line boundary for the application extends from the main site area to include part of the R157, the proposed link road and bridge over the River Tolka to the south-east, and drainage connections to the south-east and north.

2.2 Description of Proposed Development

The proposed development consists of

- 356 no. residential units. (252 houses and 104 apartment/duplexes)
- A 628sqm creche with 136 no. childcare spaces
- 2 no. signalised junctions on the R157 and the provision of a new link road connecting the R157 and the Old Navan Road (including new bridge over the River Tolka)
- the provision of 1 no. pumping station.
- All associated ancillary development works including footpaths, cycle lanes, car and bicycle parking, drainage, public lighting, bin storage, boundary treatments and landscaping/amenity areas

2.3 Construction Process

2.3.1 Construction Site Establishment

A temporary site compound will be set up during the construction stage of the works.

Proposed works will include construction of a site compound, perimeter hoardings, provision of site security and access points, and erection of cranes as necessary. Safeguards will be put in place to protect the site, the works, materials and plant. Existing buildings, persons and access will be protected during the works.

2.3.2 Working Hours

The proposed construction working hours will be from 7am to 7pm Monday to Friday, and 7am to 2pm on Saturdays. No construction work will take place on Sundays or public holidays, except works necessary for health and safety reasons or to protect the environment. An Outline Construction Traffic Management Plan has been prepared by Paul McGrail Consulting Engineers and is submitted with the planning application.

2.3.3 Earthworks

During construction of foundations, underground services and utilities, and flood attenuation tanks, site earthworks will be required. Site investigations will be carried out by the contractor prior to construction. Any contaminated soils will be segregated and removed off-site in accordance with relevant waste legislation.

The programming and scheduling of earth works will be managed by the Main Contractor.

2.3.4 Phasing

The proposed development comprises the third phase of residential development by Marina Quarter Ltd at Dunboyne North and this third phase will be constructed in two phases – Phase 3A and Phase 3B. Phase 3A comprises Cells 01 to 07 and the creche. Phase 3B comprises Cells 08 to 16.

The subject site is also located within Phases 1A, 1B and 1C of the Dunboyne North Masterplan Area.

2.3.5 Traffic Management

An outline Construction Traffic Management Plan has been completed by Paul McGrail Consulting Engineers and submitted with the application.

CHAPTER 3 | Project Need & Alternatives

The Planning and Development Regulations, 2001, as amended, require:

> *"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."*

The requirement is elaborated at paragraph 2(b), which makes clear that reasonable alternatives may include project design proposals, location, size and scale, which are relevant to the proposed development and its specific characteristics. The Regulations require that an indication of the main reasons for selecting the preferred option, including a comparison of the environmental effects be presented in the EIAR.

The Environmental Protection Agency (2022) Guidelines on the Information to be Contained in Environmental Impact Assessment Reports 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 in deciding on the selected option. A detailed assessment (or 'mini-EIA') of each alternative is not required."*

The Guidelines also state that the range of alternatives considered may include the 'do-nothing' alternative.

Accordingly, Chapter 3 of the EIAR Volume II provides an outline of the main alternatives examined during the design phase. It sets out the main reasons for choosing the development as proposed, taking into account and providing a comparison on the environmental effects. The assessment of alternatives is considered under the following headings;

i. Do Nothing Alternative
ii. Alternative Locations and Uses
iii. Alternative Design/Layouts
iv. Alternative Processes

3.1 Expertise & Qualifications

This chapter is prepared by Deirdre Hargaden from JFA (John Fleming Architects). She is a qualified architect with experience in conservation and has worked on a variety of projects requiring EIA Reports, including hotel and residential developments.

3.2 Proposed Development

The development site is in Bennetstown, north of Dunboyne town, and is accessible via the R157 road. The area is primarily agricultural but is part of a master plan for development. The site is near several recently approved developments, including residential units, commercial buildings, and infrastructure projects.

3.3 Methodology

The EIA report follows specific legislation and guidelines from the European Union and Ireland. The assessment included various site surveys, such as for trees, aquatic life, and wildlife, and consultations with local authorities to ensure the design meets all requirements.

3.4 Project Need

There is a significant housing shortage in Ireland. The proposed site is ideal for residential development due to its location near transport links and its designation as residential land in local plans. This project is part of a larger masterplan to create a mixed-use live/work community around the train station.

3.5 Baseline Environment

The site is a greenfield area currently used for pasture, located within a larger development zone. It is flat and accessible, with plans for road upgrades and connections to utilities. The surrounding area includes agricultural land and newly approved developments.

3.6 The 'Do nothing' Scenario

If the development does not proceed, the need for housing in the area will remain. The land would stay underutilized, and the objectives of local development plans to create a mixed-use community would not be met.

3.7 Alternative Project Locations & Alternative Uses

The proposed site is specifically zoned for residential use according to local plans. Therefore, considering alternative locations is not necessary. The development aligns with zoning goals and is the best use of the site.

3.8 Alternative Designs/Layouts

Several design alternatives were considered, focusing on different layouts and uses of space. Feedback from local authorities was incorporated to improve density, connectivity, open space, and overall site layout. The final design aims to balance residential needs with environmental and community considerations.

The alternatives chapter details 10 no. alternative layouts and designs that were considered for the site. This includes the layouts and designs lodged to the council at Section 247 stage, Section 32B stage, and the full application stage.

3.9 Alternative Mitigation

For each aspect of the environment, each specialist has considered the existing environment, likely impacts of the proposed development, and reviewed feasible mitigation measures to identify the most suitable measures appropriate to the environmental setting of the proposed development.

3.10 Alternative Flood Risk Management

The proposed residential development is located adjacent to an area designated as at risk of pluvial flooding. The proposed link road crosses an existing fluvial flood zone and as part of the development and as outlined in the LAP a new road and associated bridge over the river Tolka is to be constructed within the Flood Zone. A Stage 3 Flood Risk Assessment has been carried out to determine the quantitative analysis of potential pluvial and fluvial flood events, the impact the proposed residential development, road and associated bridge would have on the flood events and mitigation measures required to ensure no increase in flood risk.

Refer to the IE Consulting Flood Risk Assessment Report for further information

3.11 Alternative Process

Due to the nature of the current proposal (i.e., a residential development greater than 100 dwellings) where the only option is to submit a large-scale Residential Development (LRD) planning application to the planning authority, it is not considered necessary to consider alternative processes for the proposed development.

CHAPTER 4 | Population & Human Health

The assessment of Population and Human Health is contained within Chapter 4 of Volume II.

This chapter of the EIAR was prepared by Saoirse Kavanagh, Executive Planning Consultant of McCutcheon Halley Planning Consultancy and assesses the potential impacts of the proposed development on population and human health that are not covered elsewhere in the EIAR. It also details the proposed mitigation measures where necessary.

The appraisal of the likely significant effects of the proposed development on population and human health was conducted by reviewing the current socio-economic environment in the EIAR study area. This comprised site visits and visual assessments of the proposed site and the surrounding area, as well as an analysis of aerial photography and Ordnance Survey (OS) mapping.

The Study Area for the assessment of potential impacts on Population and Human Health includes the Electoral Divisions (EDs) of Dunboyne (Meath).

4.1 Population

The Development Plan notes that the town of Dunboyne had a population of 7,272 in 2016, which was a 4.5% increase on the 6,959 population of the town in 2011. In contrast, Dunboyne Town recorded a population of 7,155 during the 2022 Census, a change of -1.6% since 2016.

The Development Plan projects that the town will have a population of 10,572 in 2027 and estimates that 2,002 no. housing units will be required for the town.

The population detail referenced in the Development Plan is based on the Dunboyne Settlement Area, as defined in the 2016 census. It is noted that the 2022 Town boundary for Dunboyne is different to the 2016 settlement boundary.

The subject site is located outside both the 2016 settlement boundary and the 2022 town boundary, to the north. Therefore, for the purposes of this detailed demographic assessment the Dunboyne (Meath) ED has been used. This ED includes the subject site and the rural area surrounding Dunboyne area, therefore encompassing a larger population than the town and settlement boundary.

4.2 Impact Assessment

In identifying potential impacts and receptors, consideration was given to the proposed residential scheme and the identified receiving environment. The principal potential receptors that will be affected by the development proposals have been identified in the following sections.

- Residential Areas in Proximity
- Community Facilities and Services, including schools and creches.
- Local Amenity
- Economic Activities

4.3 Do Nothing Scenario

If the development were not to proceed there would be no immediate impact on the existing population, economic activity, or community services and facilities in the town. However, if the development does not occur there will be a shortfall in housing supply in the area which may negatively impact the continued sustainable growth of the town.

The site is zoned for residential development and the provision of housing on the subject site will support the core strategy and objectives of the Meath County Development Plan 2021-2027 and the Dunboyne North Masterplan 2022. If the development does not occur the zoning and objectives of the local planning policy will not be realised in the short term.

4.4 Construction Phase Impacts

The construction of the proposed development is expected to be completed within 3 years. The potential impacts arising during the construction phase relate to short term impacts to quality of life, including visual impact/amenity, noise, air quality, and transport. The construction phase is anticipated to result in a temporary boost to the local economy as workers employed at the site can be expected to make use of local retail facilities and other services. As with any construction site, there will be potential risk to health and safety in terms of injury or death of construction personnel on-site due to the usage of large, mobile machinery as well as heavy equipment and materials.

4.5 Operational Phase

Due to the nature of the development, there will be few hazards associated with the operational phase of the project and therefore no potential significant negative impact in terms of health and safety. The proposed development is projected to provide an additional population of c. 975 no. people. The local creches, schools and facilitates have been found to have sufficient capacity to cater for this increase in population.

4.6 Mitigation and Monitoring

4.6.1 Construction Phase

Health and safety risks are the primary concern during the construction phase. These will be managed in accordance with Safety, Health, and Welfare at Work (Construction) Regulations, 2013. The design of the proposed development will be subject to safety design reviews to ensure that all requirements of the project are safe. A project supervisor for construction stage (PSCS) will be appointed and a contractor safety management program will be implemented to identify potential hazards associated with the proposed works. When issues are identified, corrective actions will be implemented to amend design issues prior to the issuance of final design for construction.

Temporary contractor facilities and areas under construction will be fenced off from the public with adequate warning signs of the risks associated with entry to these facilities. Entry to these areas will be restricted and they will be kept secure when construction is not taking place. Site lighting and camera security may be used to secure the site and any lighting will be set up with consideration of the adjoining property.

Measures to ensure public safety, with respect to construction traffic and the construction phase have been included in the Construction Traffic Management Plan (CTMP) and the Construction and Environment Management Plan (CEMP) submitted with the application. A final CTMP and CEMP will be agreed with the Planning Authority prior to commencement of development.

4.6.2 Operational Phase

Measures to avoid potential negative impacts on Population and Human Health have been fully considered in the design of the project and are integrated into the final layout and design. Compliance with the layout and design will be a condition of the permitted development. As such no mitigation measures are required.

CHAPTER 5 | Land, Soil, & Geology

5.1 Introduction

The assessment of Land, Soils & Geology is contained within Chapter 5 of the EIAR. This chapter of the EIAR evaluates the likely significant effects, if any, which the proposed development will have on Land, Soils and Geology. This chapter contains necessary information as defined in the Environmental Protection Agency (EPA) 'Guidelines on the Information to be contained in Environmental Impact Assessment Reports' (EPA, 2023).

The chapter initially provides a description of the receiving environment of the site and the potential impacts of the development. When assessing the potential impacts, this assessment considers the significance of the environmental attributes, and the predicted scale, and duration of the likely effects.

The chapter also outlines the proposed mitigation measures that will reduce or eliminate the identified potential impacts and defines the residual effects of the proposed development (the effect after the implementation of mitigation measures). effect after the implementation of mitigation measures).

5.2 Existing Environment

5.2.1 Site Location

The subject site is located within the townland of Bennetstown to the north of Dunboyne town. The site is phase 3 of a larger masterplan area. Phases 1 and 2 are situated to the east and north of the site. The proposed construction is envisaged to consist of conventional foundations and pavement make up with some local excavations for services.

5.2.2 Topography

The site slopes from 75m at the northern boundary of the proposed development to 71.86m to the south at an average gradient of 1 in 60.

5.2.3 Soils and Subsoils

According to the EPA and GSI online mapping the principal soil type on-site is well drained mineral soils. According to the GSI public data viewer (GSI, 2025), the primary superficial / quaternary sediments underlying the vicinity of the site include Till derived from limestone and Alluvium, located in the north, south and east extents of the access road.

5.2.4 Geology

The GSI bedrock geology 100k map (GSI, 2025) identifies the underlying bedrock of the site as Dark Limestone and Shale of the Lucan Formation.

5.3 Impact Assessment

5.3.1 Do Nothing Scenario

In a "Do Nothing" scenario, the baseline environment of the site's land, soils, and geology would remain unchanged with no excavations or construction, resulting in a neutral effect. The natural state of the area would persist temporarily and

in the short term. However, considering existing permitted developments nearby, a similar development aligned with national and regional policies would likely proceed on the site, resulting in comparable significant effects.

5.3.2 Demolition Phase

The demolition of existing buildings, which rely on internal structural elements for stability, is expected to have minimal impact on land, soils, and geology since it involves only surface-level activities with no excavation. This prevents soil disturbance, erosion, or compaction, preserving soil integrity. Without mitigation, the impact is anticipated to be short-term, imperceptible, and negative.

5.3.3 Construction Phase

In absence of mitigation measures, the construction phase would present potential impacts associated with the following activities:

- Accidental spills, discharges, and leaks.
- Earthworks and Excavations.
- Storage of Hazardous Material.
- Import or Export of Material.

Without the consideration and employment of mitigation measures the potential impacts during the construction phase on land, soils and geology, are negative, not significant and long term.

5.3.4 Operational Phase

The development will affect land take and local recharge to soil and bedrock due to the introduction of hard stand, which protects the underlying aquifer but slightly reduces local recharge. However, due to the large aquifer area, this reduction will not significantly impact the natural hydrogeological regime. Typical residential activities during the operational phase will not disturb the topsoil, subsoils, or geology, and without mitigation, the potential effects are expected to be short-term, imperceptible, and neutral.

The development will not involve direct discharges to the ground or abstractions from the bedrock aquifer during operation, but there is a risk of localized accidental discharge from a car park leak. Without mitigation measures, the potential effects on land and soils are expected to be long-term, significant, and negative.

5.4 Cumulative Impact

Existing residential and commercial developments nearby, along with multiple approved projects, may proceed concurrently or overlap during various phases. However, there will be no impact on land, soils, and geology since each development will follow its own CEMP and mitigation plan, with no connectivity between projects. Without adherence to these plans, the impact on the local and regional environment could be long-term, significant, and negative.

5.5 Mitigation

5.5.1 Incorporated Design

Incorporated design measures will be employed and will include appropriate design measures such as the proper storage and containment of hazardous substances and proper drainage systems in line with best practice, standard details, policies and guidelines already incorporated into the proposed design.

5.5.2 Demolition Phase

The demolition works for the proposed development are limited to surface-level activities with no excavation, resulting in minimal impact on land and soils. The process involves dismantling structures without disturbing the natural soil structure or landscape, thereby preventing soil erosion or compaction. Waste materials will be managed according to regional and national legislation.

5.5.3 Construction Phase

In order to reduce impacts on the soils & geological environment, construction will be undertaken in compliance with a Construction Environmental Management Plan (CEMP), the contractor will be obliged to incorporate mitigation measures for:

- Control of soil excavation;
- Source of fill and aggregates;
- Hydrocarbons and other construction chemicals;
- Management of Dust;
- Cement/concrete works
- Management of Accidental Discharge;
- Implementation of the mitigation measures set out in the EIAR.

The predicted impact on the geological and hydrogeological environment during the construction phase is neutral, imperceptible and short-term, the magnitude of impact is considered negligible.

5.5.4 Operational Phase Mitigation

The proposed development includes a hardstand cover and a surface water drainage system designed. SuDS will manage run-off quantity and quality, integrating other SuDS measures include Modular Permeable Paving, Swales, Petrol Interceptors and Hydro brake Flow Control. The drainage network will include a catchment area with a hydrobrake flow control device, and any local car leaks will be treated by a Class 1 Hydrocarbon Interceptor.

As a result, the risk of accidental discharge is mitigated, and the predicted impact on land, soils and geology during the operational phase is neutral, imperceptible, and short-term, with negligible magnitude

5.6 Residual Impact Assessment

The implementation of mitigation measures will prevent potential impacts on the land, soils, and geological environment during the demolition, construction, and operational phases of the proposed development. Given the inter-relationship between land, soils, geology, hydrogeology, and surface water, the impacts discussed will be relevant to both Land, Soils and Geology and Hydrology and Hydrogeology.

5.6.1 Demolition Phase

A carefully planned approach to waste management during the demolition phase, will ensure that the impact on land, soils, and the geological environment is short-term, imperceptible, and neutral. The magnitude of the impact is considered negligible.

5.6.2 Construction Phase

A carefully planned approach to the following activities during the construction phase will help ensure minimal impact on land, soils, and the geological environment:

- Control of soil excavation, removal, and infill
- Management of fill and aggregate sources
- Proper handling of fuel and chemicals

These measures will result in a short-term, imperceptible, and neutral impact, with the magnitude of the impact considered negligible.

5.6.3 Operation Phase

The mitigation measures will effectively address potential impacts on land, soils, and geology once the development is operational. The residual effect during the operational phase is considered neutral, imperceptible, and short-term, with the impact magnitude rated as negligible.

5.7 Monitoring

5.7.1 Demolition Phase

The demolition works for the proposed development are limited to surface-level activities without excavation, preventing disturbance to the natural soil structure and avoiding soil erosion or compaction. All waste materials will be managed in accordance with regional and national legislation, with resources dedicated to efficient waste practices, ensuring proper processing, segregation, reuse, recycling, recovery, or disposal at licensed facilities. As a result, no monitoring is required.

5.7.2 Construction Phase

During the construction phase, the following monitoring measures will be implemented:

- Inspect surface water run-off and sediment controls regularly.
- Conduct soil sampling to determine disposal options and prevent contamination.
- Monitor excavation works for signs of contamination.
- Ensure adherence to CEMP guidelines (e.g., concrete pouring, refuelling).
- Monitor soil and surface water for accidental discharges to underlying geology.

5.7.3 Operational Phase

To minimize accidental discharges to soil, regular maintenance of the surface water drainage system, including the hydrobrake, separators/interceptors, and foul sewers, is recommended. Additionally, monitoring of surface water run-off will be necessary to detect any accidental discharges to the underlying geology.

CHAPTER 6 | Hydrology & Hydrogeology

6.1 Introduction

This chapter of the EIAR has been prepared by AWN Consulting Ltd. which assesses and evaluates the likely significant impacts of the proposed development on the surrounding hydrological and hydrogeological environment associated with the construction of the proposed development.

6.2 Existing Environment

6.2.1 Site Location

The subject site is located within the townland of Bennetstown to the north of Dunboyne town. The proposed large scale development will consist of the construction of 356 no. residential units comprising a mixture of 252 no. houses and 104 no. apartments/duplex units, 1 no. childcare facility and the provision of landscaping and amenity areas and all associated infrastructure and services including a vehicular and pedestrian/cycle access point, roads, parking, lighting and drainage. The site is phase 3 of a larger masterplan area. Phases 1 and 2 are situated to the east and north of the site. The proposed construction is envisaged to consist of conventional foundations and pavement make up with some local excavations for services.

6.2.2 Hydrological and Hydrogeological Environment

The proposed development site as defined by the EPA nomenclature (EPA, 2024) is situated in Hydrometric Area No. 09 of the Irish River Network, and lies within the Liffey and Dublin Bay Catchment (Catchment ID: 09), and the Tolka_SC_010 Sub-Catchment (ID: 09_10).

Site drainage intermittently discharges through field drains to the Tolka River following period of high recharge. The River Tolka (Tolka_020, IE_EA_09T010800) runs from the north of the site flowing in a south-southeastern direction, traversing two (No.2) narrow sections of the northern portion of the site, before flowing south along / through the adjacent lands to the west of the M3 Motorway prior to traversing / aligning the boundary in the southern portion of the site. From here, the River Tolka then flows for approximately 20.5 km (hydrological distance) before its outfall to the Tolka Estuary transitional waterbody. As such there is a hydrological connection to the South Dublin Bay and River Tolka Estuary SAC from stormwater discharge to a tributary of the Tolka. However, based on the c. 20.5 km distance between the proposed development site and SAC, there is no potential impact during construction or operation on groundwater quality discharging to the estuary as a result of the proposed development.

The GSI currently denotes a 'Low' (L) vulnerability classification underlaying the majority of the proposed development site indicating 10m+ overburden of low permeability subsoils, coupled with a small zone of High (H) vulnerability in the southern and western portion of the site, while parts / portions of the east (NE & SE) of the site are underlain by Moderate (M) vulnerability rating, thereby indicating an overburden (subsoil) thickness of 3-5m and 5-10m across the site. Based on the GSI public data viewer (GSI, 2024) the bedrock beneath the general vicinity of the site is classified as a locally important aquifer (LI) – *bedrock which is moderately productive only in local zones*.

A public ground water supply is located c. 600 m downgradient of the proposed development site, and part of the development site is located within the source protection zone for these supply wells.

6.3 Impact Assessment

6.3.1 Do Nothing Scenario

In a "Do-Nothing" scenario, the hydrological and hydrogeological environment would remain unchanged, with no disturbances or alterations. While the natural state of the area would persist, nearby permitted developments may proceed, likely resulting in similar impacts to the proposed development.

6.3.2 Demolition Phase

During the demolition phase, limited to surface-level activities with no excavation, will have minimal impact on the hydrology and hydrogeology. As there will be no disturbance to the soil structure, the potential for erosion or compaction is prevented, resulting in negligible effects on the environment. In the absence of mitigation, the impact on land, soils, and geology is expected to be short-term, not significant, and negative.

6.3.3 Construction Phase

There is a potential risk of surface water contamination during the construction phase due to pollutants such as suspended solids, hydrocarbons, construction chemicals, cement, and wastewater. These pollutants could affect nearby watercourses, through runoff or lateral migration into the underlying aquifer. Without mitigation measures, runoff may increase turbidity, impact infiltration, and harm local infrastructure, watercourses, or groundwater. Proper containment, monitoring, and avoidance measures are necessary to prevent accidental discharges and minimize impacts. If mitigation is not implemented, the impact on surface water quality would be negative, significant, and short-term.

Without mitigation, the potential for water quality reduction from pollutants the transitional waterbody and GWB could negatively impact human health, particularly from hydrocarbons and petroleum products. However, there are no recorded recreational waters, bathing waterbodies, or surface water drinking sources downstream. As a result, the impacts on human health and populations from changes to the hydrological environment would be negative, slight, and short-term in the absence of mitigation measures.

Accidental discharges during the construction phase, while possible, are temporary and short-lived. They will not significantly impact the long-term water quality or the status of the River Tolka or South Dublin Bay and River Tolka Estuary SAC. The proposed development will not cause any significant deterioration or prevent the achievement of Water Framework Directive (WFD) objectives or the goals of the 2022-2027 River Basin Management Plan. Therefore, there is no potential for impacts on WFD status during construction.

6.3.4 Operational Phase

In absence of mitigation methods, the operational phase would present potential impacts associated with the following activities:

- Slight increase in hardstanding resulting in increased rate of runoff
- Indirect discharges through sewers to the Naulswood Stream and the River Tolka and additional loading to Ringsend WWTP.

In the absence of mitigation measures, the potential impacts during the operational phase are **neutral, imperceptible**, and **long-term** based on the hazard loading and the significant dilution and attenuation within the drainage network and receiving water courses.

6.3.5 Cumulative Impact

Nearby residential and commercial developments, along with multiple permissions in the area, could overlap during the demolition, construction, and operational phases. However, each development will follow its own CEMP and mitigation plan, ensuring no effects on hydrology and hydrogeology, as there is no connectivity between them. If the CEMP and mitigation plans are not followed, the impact on the local and regional environment could be long-term, significant, and negative.

6.4 Mitigation

6.4.1 Incorporated Design

Incorporated design measures will be employed and will include appropriate design measures such as the proper storage and containment of hazardous substances and proper drainage systems in line with best practice, standard details, policies and guidelines already incorporated into the proposed design.

The following design mitigation measures have been incorporated to address potential impacts of the development:

- Provision of SuDS measures such as Modular Permeable Paving, Swales, Detention Basins, Petrol interceptor, Hydrobrake flow control included. Therefore, the risk of accidental discharge has been adequately addressed through design.
- All surface water will be discharged to the existing storm water network and foul water will be discharged to the existing foul sewer system located along the R147.

6.4.2 Demolition Phase

The demolition phase of the proposed development involves surface-level activities, with no excavation work, meaning minimal impact on hydrology and hydrogeology. The absence of excavation prevents soil disturbance, erosion, or compaction, ensuring that the land's composition, stability, and fertility are not significantly affected. No mitigation measures are required for hydrogeology and hydrology during the demolition phase. The demolition works will have a negligible impact on the environment.

6.4.3 Construction Phase

In order to reduce impacts on the hydrological & hydrogeological environment, a number of mitigation measures will be adopted as part of the construction works on site.

- Suspended solids management.
- Cement/concrete works.
- Material Storage & handling.
- Hydrocarbons and other construction chemicals.
- Surface water flow and quantity.
- Wastewater management.
- Implementation of the mitigation measures set out in the EIAR via a Construction & Environmental Management Plan (CEMP).

The predicted impact on the hydrological environment during the construction phase is ***neutral,*** **imperceptible** and ***short-term*****.**

6.4.4 Operational Phase

The proposed development stormwater drainage network design includes sustainable drainage systems (SuDS) these measures by design ensure the stormwater leaving the site is to be attenuated and treated within the new development site boundary to ensure suitable quality. SuDS measures such as Detention Bains will be used to provide attenuation of stormwater runoff and also facilitate some settling of particulate pollutants. Other SuDS measures include Modular Permeable Paving, Swales, Petrol Interceptors and Hydro brake Flow Control.

The quality of discharged water to the foul and storm network is expected to be compliant with respective licence conditions following treatment and management. In case of any exceedances of parameters stipulated by discharge permit conditions, water will be retreated on site, or disposed of to a licenced facility. The discharges to storm water and combined foul water network shall comply with the requirements established in the discharge licence to Meath County Council (for storm water network) and/or Irish Water (for foul water network).

A review of the Ringsend Annual Environmental report (2022) confirmed that there is adequate capacity for foul water. The average effluent discharge (Design Flow as constructed), for the Proposed Development is 1.59 l/s which would only equate to 0.014% of the licensed discharge at Ringsend WWTP [peak hydraulic capacity]).

Riparian buffers will be implemented in compliance with INF OBJ 30 (Meath County Development Plan 2021-2027; Strategic Environmental Assessment (SEA) Environmental Report (Volume 2))

"To establish riparian corridors free from new development along all significant watercourses and streams in the County as follows: -A 10 metre wide riparian buffer strip measured from the top of the bank either side of all watercourses in urban areas; - A 30m wide riparian buffer strip from top of bank to either side of all watercourses is required as a minimum outside of urban areas"

It is noted that there is no plan to abstract from or discharge to the aquifer within the proposed development during construction or operation. There is also no requirement to significantly alter the current soil protection present beneath the site by excavation during construction. During operation, no bulk oil or other chemical storage is required. The land will be further protected by hardstand with any contaminated water (from a car leak) being diverted through storm drainage with treatment in an oil interceptor prior to discharge to sewer. There is no required discharge to ground. As such there is no likely impact on the potable water supply as a result of the development.

The predicted impact on the hydrological & hydrogeological environment during the construction phase is ***neutral, imperceptible*** and ***short-term***.

6.5 Residual Impact Assessment

6.5.1 Demolition Phase

The demolition works will have minimal impacts on the hydrogeological and hydrological environment due to being limited to surface-level activities without excavation. As a result, there will be no significant effects on land composition, stability, or fertility. The implementation of mitigation measures will ensure that the residual impact during the demolition phase remains neutral, imperceptible, and short-term.

6.5.2 Construction Phase

The mitigation and monitoring measures will effectively address potential impacts on the hydrogeological and hydrological environment during the construction phase. As a result, the residual effect on this environment is expected to be neutral, imperceptible, and short-term.

6.5.3 Operation Phase

The mitigation and monitoring measures will effectively address potential impacts on the hydrogeological and hydrological environment during the operational phase. As a result, the residual effect on this environment is expected to be neutral, imperceptible, and long-term.

6.6. Monitoring

6.6.1 Demolition Phase

The demolition phase involves only surface-level activities, with no excavation, eliminating the risk of increased groundwater vulnerability from accidental spills or discharges.

All waste materials will be managed according to regional and national legislation. Waste will be taken to appropriately registered facilities for processing, segregation, reuse, recycling, recovery, or disposal, preventing contaminated runoff from reaching surface or groundwater.

6.6.2 Construction Phase

During the construction phase, the following monitoring measures will be implemented:

- Weekly Inspections to ensure surface water drains remain unblocked.
- Regular inspections of surface water runoff and sediment controls.
- Maintenance of runoff diversion channels and bunds.
- Soil sampling to confirm appropriate disposal options and prevent contaminated runoff.
- Inspection of mitigation measures (e.g., concrete pouring, refueling).
- Water quality monitoring to ensure suitability for discharge to the stormwater network.
- Full adherence to CEMP (e.g., concrete pouring, refuelling).

6.6.3 Operation Phase

To minimize accidental discharges to soil, regular maintenance of the surface water drainage system, including the hydrobrake, separators/interceptors, and foul sewers, is recommended. Additionally, monitoring of surface water run-off will be necessary to detect any accidental discharges to the underlying geology.

CHAPTER 7 | Air Quality

Non-Technical Summary

AWN Consulting Limited conducted an assessment of the likely impact on air quality associated with the proposed residential development at Bennetstown, Dunboyne, Co. Meath.

Baseline Environment

Baseline data and data available from similar environments indicates that levels of nitrogen dioxide (NO_2), particulate matter less than 10 microns (PM_{10}) and particulate matter less than 2.5 microns ($PM_{2.5}$) and are generally well below the National and European Union (EU) ambient air quality standards.

Potential Impact of the Proposed Development

Construction Phase

An assessment of the potential dust impacts as a result of the construction phase of the proposed development was carried out based on the UK Institute for Air Quality Management 2024 guidance document *'Guidance on the Assessment of Dust from Demolition and Construction'*. This established the sensitivity of the area to impacts from construction dust in terms of dust soiling of property, and human health effects. The surrounding area was assessed as being of medium sensitivity to dust soiling and of low sensitivity to dust-related human health effects.

The sensitivity of the area was combined with the dust emission magnitude for the site under three distinct categories: earthworks, construction and trackout (movement of vehicles) in order to determine the mitigation measures necessary to avoid significant dust impacts. It was determined that there is at most a medium risk of dust related impacts associated with the proposed development. In the absence of mitigation there is the potential for ***direct, short-term, localised, negative,*** and ***not significant*** impacts to air quality.

In addition, construction phase traffic emissions have the potential to impact air quality, particularly due to the increase in the number of HGVs accessing the site. Construction stage traffic did not meet the scoping criteria for a detailed modelling assessment outlined in Transport Infrastructure Ireland's 2022 guidance document *Air Quality Assessment of Specified Infrastructure Projects – PE-ENV-01106.* As a result a detailed air assessment of construction stage traffic emissions has been scoped out and the construction stage traffic emissions will have a ***imperceptible, short-term*** and ***neutral*** impact on air quality.

Operational Phase

Operational phase traffic has the potential to impact air quality due to vehicle exhaust emissions as a result of the increased number of vehicles accessing the site. Operational stage traffic emissions were calculated at representative worst-case receptors in the area and it was determined that concentrations of NO_2, PM_{10} and $PM_{2.5}$ will increase by an imperceptible amount as a result of the proposed development. Operational stage traffic emissions will have a ***long-term, direct, negative*** and ***not significant*** impact on air quality.

Mitigation and Residual Effects (Post-Mitigation)

Construction Phase

Detailed dust mitigation measures are outlined within Section 7.9.1 of Chapter 7 to ensure that no significant nuisance as a result of construction dust emissions occurs at nearby sensitive receptors. Once these best practice mitigation measures, derived from the Institute for Air Quality Management 2024 guidance *Guidance on the Assessment of Dust*

from Demolition and Construction as well as other relevant dust management guidance, are implemented the impacts to air quality during the construction of the proposed development are considered, ***short-term, direct, negative*** and ***not significant***, posing no nuisance at nearby sensitive receptors (such as local residences).

Operational Phase

As the predicted concentrations of pollutants will be imperceptible no mitigation is required. The impact to air quality has been assessed as ***long-term, localised, negative*** and ***not significant***.

Cumulative Impact of the Proposed Development

Construction Phase

There is the potential for cumulative impacts to air quality should the construction phase of the proposed development coincide with that of other developments within 500m of the site. A review of proposed/permitted developments in the vicinity of the site was undertaken and relevant developments with the potential for cumulative impacts were identified.

There is a medium risk of dust impacts associated with the proposed development. The dust mitigation measures outlined in Section 7.9.1 of Chapter 7 will be applied during the construction phase which will avoid significant cumulative impacts on air quality. With appropriate mitigation measures in place, the predicted cumulative impacts on air quality associated with the construction phase of the proposed development and the permitted cumulative developments are deemed ***short-term, localised, negative*** and ***not significant.***

Operational Phase

The direct impacts of the operational phase on air quality associated with the proposed development are predicted to be imperceptible. Cumulative impacts are considered ***direct, long-term, negative*** and ***not significant.***

Overall no significant impacts to air quality are predicted during the construction or operational phases of the proposed development.

CHAPTER 8 | Climate Change

Non-Technical Summary

AWN Consulting Limited has been commissioned to conduct an assessment of the likely impact on climate associated with the proposed residential development at Bennetstown, Dunboyne, Co. Meath.

Baseline Environment

The existing climate baseline can be determined by reference to data from the EPA on Ireland's total greenhouse gas (GHG) emissions and compliance with European Union's Effort Sharing Decision "EU 2020 Strategy" (Decision 406/2009/EC). The EPA state that Ireland had total GHG emissions of 57.64 Mt CO2e in 2024. This is 1.03 Mt CO2e higher than Ireland's annual target for emissions in 2024. EPA projections indicate that Ireland has used 82.8% of the 295 Mt CO2e Carbon Budget for the five-year period 2021-2025. This leaves 17.5% of the budget available for 2025, requiring a substantial 10.3% annual emissions reduction for 2025 to stay within budget..

Potential Impact of the Proposed Development

The potential impacts on climate have been assessed in two distinct ways – a greenhouse gas assessment (GHGA) and a climate change risk assessment (CCRA). The GHGA quantifies the GHG emissions from a project over its lifetime and compares these emissions to relevant carbon budgets, targets and policy to contextualise magnitude. The CCRA considers a projects vulnerability to climate change and identifies adaptation measures to increase project resilience.

Greenhouse Gas Assessment

GHG emissions associated with the proposed development are predicted to be a small fraction of the 2030 carbon targets. The proposed development will incorporate some mitigation measures which will aim to reduce climate impacts during construction and once the development is operational. At a minimum these include the Nearly Zero Energy Building (NZEB) compliance and targeting a Building Energy Ratio (BER) of A2 for the domestic units.

GHG emissions during the operational phase due to road traffic were assessed. The changes in traffic volumes associated with the operational phase of the development were substantial enough the meet the assessment criteria requiring a detailed climate modelling assessment, as per Transport Infrastructure Ireland (TII) 2022 guidance "*PE-ENV-01104: Climate Guidance for National Roads, Light Rail and Rural Cycleways (Offline & Greenways) – Overarching Technical Document"*. There will be a slight increase in the traffic on the local road network which will result in some minor increases in CO_2e emissions. These have been assessed as a small fraction of Ireland's transport sector 2030 emissions ceiling.

Climate Change Risk Assessment

A CCRA was conducted to consider the vulnerability of the proposed development to climate change, as per the TII 2022 PE-ENV-01104 guidance. This involves an analysis of the sensitivity and exposure of the development to future climate hazards which together provide a measure of vulnerability. The hazards assessed included flooding (coastal, pluvial, fluvial); extreme heat; extreme cold; drought; extreme wind; lightning, hail and fog; wildfire and landslides. The proposed development is predicted to have at most low vulnerabilities to the various climate hazards and therefore climate change risk is not considered significant.

Overall, no significant impacts to climate are predicted during the construction or operational phases of the proposed development.

Mitigation and Residual Effects (Post-Mitigation)

A number of best practice mitigation measures are proposed for the construction phase of the proposed development to ensure that impacts to climate are minimised. Design mitigation has been considered when assessing the vulnerability of the development to future climate change.

The impact to climate as a result of a proposed development must be assessed as a whole for all phases. The proposed development will result in some impacts to climate through the release of GHGs. TII reference the IEMA guidance which states 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 been designed to reduce the impact on climate where possible during operation. The proposed development has incorporated some mitigation measures to reduce climate change impacts and is aligned with Ireland's net zero by 2050 trajectory. Once mitigation measures are put in place, the effect of the proposed development in relation to GHG emissions is considered ***direct, long-term, negative*** and ***slight*** which is ***not significant*** in EIA terms.

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.

Cumulative Impact of the Proposed Development

With respect to the requirement for a cumulative assessment PE-ENV-01104 states that *"the identified receptor for the GHG Assessment is the global climate and impacts on the receptor from a project are not geographically constrained, the normal approach for cumulative assessment in EIA is not considered applicable. By presenting the GHG impact of a project in the context of its alignment to Ireland's trajectory of net zero and any sectoral carbon budgets, this assessment will demonstrate the potential for the project to affect Ireland's ability to meet its national carbon reduction target. This assessment approach is considered to be inherently cumulative".*

As a result, the cumulative impact of the proposed development in relation to GHG emissions is considered direct, long-term, negative and slight, which is overall not significant in EIA terms.

CHAPTER 9 | Noise & Vibration

AWN Consulting Limited has been commissioned to conduct an assessment of the noise and vibration impacts associated with the proposed development at Bennetstown, Dunboyne, Co. Meath.

The existing noise climate in the vicinity of the proposed development has been surveyed. Prevailing noise levels are primarily attributed to aircraft and road traffic. The Dublin Airport noise contours have also been taken into account for this assessment.

The noise impact assessment has focused on the potential outward impacts associated with the construction and operational phases of the proposed development on its surrounding environment, as well as the potential inward impacts on the development itself during the operational stage.

The assessment has concluded that during the demolition phase construction noise is predicted to have a negative, moderate to significant and brief to temporary effect at receptor location R3. Not that this is only a small portion of the overall construction

During the remainder of the construction works predictions indicate that when construction works are within 30m of receptor locations R3 and R4 noise levels from construction works will cause a moderate to significant, brief to temporary impact. However, for the vast majority of the time works will take place at distances greater from the receptor locations and noise levels will be within the recommended BS5228 criteria at receptor locations, and hence a negative, not significant to slight and short-term impact will be experienced at these locations.

During the operational phase, the outward noise impact to the surrounding environment will be due to additional traffic on surrounding roads and plant noise. Additional traffic from the proposed development is predicted to cause a negative, imperceptible or not significant, long-term impact. Suitable criteria have been selected for plant noise emissions that will be adhered to at the design stage to ensure the impact is negative, not significant and long-term.

The operational phase inward impact assessment has taken account of the Dublin Airport noise contours and road traffic increases. The assessment provides upgraded glazing and ventilation specifications that are required in order to mitigate the inward noise impact on the development itself. The mitigation covers both the residential aspects of the development and the childcare facility.

CHAPTER 10 | Waste

10.1 Introduction

AWN Consulting undertook the waste management assessment. The receiving environment is largely defined by Meath County Council (MCC) as the local authority responsible for setting and administering waste management activities in the area through regional and development zone specific policies and regulations.

There will be waste materials generated from site clearance works, excavations, construction of the new development and from the operation of the new development. There is currently no waste generated at the proposed development site.

10.2 Potential Impacts and Mitigation Measures of the Proposed Development

Construction Phase

During the construction phase the mismanagement of waste, including the inadequate storage of waste, inadequate handling of hazardous waste, the use of inappropriate or insufficient segregation techniques, and the use of non-permitted waste contractors, would likely lead to negative impacts such as waste unnecessarily being diverted to landfill, litter pollution which may lead to vermin, runoff pollution from waste, fly tipping and illegal dumping of waste. In the absence of mitigation, the effect on the local and regional environment is likely to be **indirect, long-term, significant** and **negative.**

Operational Phase

The potential impacts on the environment during the operational phase of the proposed development would be caused by improper, or lack of waste management. In the absence of mitigation, the effect on the local and regional environment is likely to be **indirect, long-term, significant** and **negative**.

10.3 Residual Effect of the Proposed Development

Construction Phase

During the construction phase, typical construction waste materials will be generated which will be source segregated on-site into appropriate skips/containers, within designated waste storage areas and removed from site by suitably permitted waste contractors as required, to authorised waste facilities, by appropriately licensed waste contractors. While the accurate keeping of waste records will be undertaken. All waste leaving the site will be recorded and copies of relevant documentation maintained.

This will all be overseen by the main contractor, who will appoint a construction phase Resource Manager to ensure effective management of waste during the excavation and construction works. All construction staff will be provided with training regarding the waste management procedures on site.

A carefully planned approach to waste management and adherence to the site-specific Resource and Waste Management Plan (Appendix 10.1) and Chapter 10 during the construction phase, this will ensure that the effect on the environment will be **short-term, neutral** and **imperceptible**.

Operational Phase

During the operational phase, waste will be generated by the residents. Dedicated waste storage areas (WSAs) have been allocated throughout the development for the use of residents. The WSAs have been appropriately sized to accommodate the estimated waste arisings from the development. The WSAs have been allocated to ensure a convenient and efficient management strategy with source segregation a priority. Waste will be collected from the designated waste collection areas by permitted waste contractors and removed off-site for re-use, recycling, recovery and/or disposal.

An Operational Waste Management Plan has been prepared and included as part of this submission as Appendix 10.2, This OWMP provides a strategy for segregation (at source), storage and collection of wastes generated within the development during the operational phase including dry mixed recyclables, organic waste, glass, mixed non-recyclables, garden/green waste, batteries, waste electrical equipment, printer cartridges, chemicals, lightbulbs, textiles, cooking oil, furniture and abandoned bicycles. This Plan/Strategy will be supplemented, as required, with any new information on waste segregation, storage, reuse and recycling initiatives that are subsequently introduced.

Provided the mitigation measures outlined in Chapter 10 are implemented and a high rate of reuse, recycling and recovery is achieved, the predicted effect of the operational phase on the environment will be ***long-term, neutral*** and ***imperceptible.***

10.4 Cumulative Impact of the Proposed Development

Construction Phase

There are existing residential and commercial developments close by, along with the multiple permissions remaining in place in the area. In a worst-case scenario, multiple developments in the area could be developed concurrently or overlap in the construction phase. Due to the high number of waste contractors in the MCC region, as provided from the National Waste Collection Permit Office and the EPA, there would be sufficient contractors available to handle waste generated from a large number of these sites simultaneously, if required. Similar waste materials would be generated by all of the developments.

Other developments in the area will be required to manage waste in compliance with national and local legislation, policies and plans which will mitigate against any potential cumulative effects associated with waste generation and waste management. As such the cumulative effect will be ***short-term, imperceptible*** and ***neutral.***

Operational Phase

There are existing residential and commercial developments close by, along with the multiple permissions remaining in place. All of the current and potential developments will generate similar waste types during their operational phases. Authorised waste contractors will be required to collect waste materials segregated, at a minimum, into recyclables, organic waste and non-recyclables. An increased density of development in the area is likely improve the efficiencies of waste collections in the area.

Other developments in the area will be required to manage waste in compliance with national and local legislation, policies and plans which will mitigate any potential cumulative impacts associated with waste generation and waste management. As such the cumulative effect will be a ***long-term, imperceptible*** and ***neutral.***

CHAPTER 11 | Landscape & Visual Impact

The assessment of the Landscape and Visual Character is contained within Chapter 11 of Volume II of the EIAR.

11.1 Methodology

The assessment is based on the recommendations in the Guidelines for Landscape and Visual Impact Assessment (GLVIA, 3rd edition) as amended in August 2024 and published by the Landscape Institute (UK) and the Institute of Environmental Management and Assessment. The assessment also considers the landscape character assessment within the Westmeath County Development Plan 2021-2027.

The LVIA was carried out during October-December of 2025. It was undertaken through a desk study and accompanying field surveys. The desk studies involved assessment of satellite imagery, Google Street View, historic and ordnance survey mapping, background search of the relevant policies from the local council, and analysis of the Zone of Theoretical Visibility (ZTV) and Zone of Visual Influence (ZoVI). The site-work stage involved the verification of nearby views from the initial desk-based study. Field notes were recorded in relation to the likes of topography, land use, significant landscape features, sensitive visual receptors and overall landscape character.

When assessing the potential impacts on the landscape and visual amenity resulting from a proposed development, the criteria considered include landscape character sensitivity, magnitude of likely impacts, and significance of landscape effects.

11.2 Receiving Environment

Dunboyne is in the southeastern corner of County Meath. It has strong transport links and has been identified in the Metropolitan Strategic Area Plans of the National Planning Framework and the Regional Spatial and Economic Strategy as an important location for population growth and economic development. Several business parks and industrial areas surround the development site within a 1km radius. The proposed development is within the Landscape Character Area (LCA) 10: The Ward Lowlands. This LCA is classed as having a low value, high sensitivity, low capacity for multi-house developments, and regional importance. The landform is gently undulating with overgrown hedgerows and trees lining the local roads.

There are no protected views, prospects, scenic routes or national trails in the surrounding environment.

11.3 Potential Effects

11.3.1 Construction Phase

Construction of the development is expected to have a *temporary, moderate* at the highest negative impact to the landscape and visual amenity with the removal of vegetation and increased construction activity, cranes and hoarding to residential receptors closest, southwest of the proposed development. No significant, profound or very profound negative impacts are expected.

11.3.2 Operational Phase

In the operational phase, the development is expected to have a *permanent, moderate* at the highest negative impact on the landscape and visual amenity. The highest negative landscape impacts are expected to be experienced by the residences closest to the proposed development, and specifically those to the south-western corner. This is expected to further reduce as existing and proposed vegetation reach maturity. No significant, profound or very profound negative impacts are expected.

11.4 Mitigation Measures

11.4.1 Construction Phase

No significant impacts are expected during the construction of the proposed development; therefore, no further mitigation measures are necessary. Nevertheless, temporary hoarding can be put in place to further reduce any visual intrusion of works to the surrounding area without impacting the landscape character.

11.4.2 Optional Phase

The proposed landscape should be implemented as submitted. No significant impacts are expected to result from the proposed development. No further mitigation is required.

11.5 Residual Impact Assessment

No additional mitigation is proposed. Provided that the proposed landscape and architectural plans are implemented as submitted, the residual impacts remain as originally assessed in the main report.

CHAPTER 12 | Material Assets: Traffic & Transport

121 Baseline Environment

The roads in the immediate vicinity of the Proposed Development include the M3 Motorway, R147, R157, L2228 (Summerhill Rd) & Old Navan Rd. The east of Dunboyne is well served by public transport options, including trains and buses with train stations located within Dunboyne itself as well as a large park & ride at the M3 Parkway station to the north of the town centre. Existing pedestrian infrastructure in the immediate vicinity of the development is poor but is anticipated to be developed in line with the Masterplan.

12.2 Potential Impacts of the Proposed Development

Construction Phase

A Design Process Traffic Management Plan has been developed as part of the planning application. The plan has been completed in full compliance with the Department of Transport Document 'Guidance for the Control and Management of Traffic at Road Works". The main focus of the plan is as follows:

- Minimising risk and delay to commuters and road users
- Minimising impacts on surrounding businesses
- Minimising impacts on surrounding dwellings
- Minimising risks imposed on road workers.

The following measures will be put in place during the construction works:

- Securely fencing off the site;
- Adequate signage defining the access and egress routes for the development;
- Adequate signage & Fencing of road works;
- Controlling traffic generated by the construction by phasing works & scheduling deliveries
- Accommodating parking requirements for employees and visitors
- Street cleaning programme

Operational Phase

The proposed infrastructure outlined within the Transportation Study at Dunboyne & Environs report is anticipated to be adequate to support the proposed development within the Dunboyne area.

In the proposed development scenario, the average delay throughout the network was anticipated to increase by approximately 10 – 20s when compared to the Do Nothing scenario. The impact for the additional trips due to the proposed development is small with the network performing within capacity for both AM and PM peaks.

Sensitivity Analysis

A sensitivity analysis was also carried out allowing for a higher level of background growth in traffic than anticipated by the NTA's demand forecasting. The results of this analysis indicate that the typical average delay across the network is similar, with an increase of approximately 35s when compared to the Do Nothing scenario. The network performs within capacity for both AM and PM peaks with the development having a small impact only.

Mitigation and Residual Effects (Post-Mitigation)

Construction Phase

No residual impacts are anticipated as a result of the development during the construction phase.

Operational Phase

No residual impacts are anticipated as a result of the development during the operational phase.

12.3 Cumulative Impact of the Proposed Development

Construction Phase

No cumulative impacts are anticipated as a result of the development during the construction phase.

Operational Phase

The full build-out of the Dunboyne North Masterplan Lands (MP 22) was assessed as the cumulative impact of the proposed development.

The full build-out results in some congestion along the R157 at the new signalized junctions as well as some congestion on the new Northern Access Road and M3 Parkway in the PM peak in particular. However, the overall delay and queues around the network are typical of busy urbanised areas and are temporary in nature, clearing within the peak hours. The congestion is primarily as a result of traffic generated by the non-residential developments in Dunboyne North.

There is no impact on the M3 mainline in the modelled scenarios with queues on off-ramps remaining reasonably short in all cases.

Sensitivity Analysis

A similar sensitivity analysis was carried out for the cumulative impact which included additional background growth in traffic. The results of this analysis show a further increase in delays and queues across the network with additional congestion on the approaches to the M3 Junction 5 and on the R157. However, the delays generally remain typical of an urbanised environment and there is no impact on the mainline of the M3 itself.

CHAPTER 13 | Material Assets: Service Infrastructure & Utilities

The full assessment of Material Assets: Services, Infrastructure and Utilities is contained within Chapter 13 of Volume II of the EIAR. This NTS provides a summary of the issues and impacts relating to the material assets of surface water drainage, foul water drainage, water supply and utilities in respect of the subject lands.

13.1 Ownership and Access

The subject lands are owned by Glenveagh Homes Limited.

Vehicular access and egress to and from the application site will be provided via a proposed road on the north of the site and an existing local road which also forms part of the Phase 1 planning application.

13.2 Surface Water Drainage

The proposed development subject of this application relates to Phase 3 of a residential development at Bennetstown, Dunboyne, Co Meath and there is no existing surface water network within the existing site. It is evident that existing rainwater drainage from the site is by means of direct infiltration and percolation into the existing agricultural ground.

The local groundwater flow direction is likely to mirror the site topography and catchment drainage.

The greenfield run off from the site travels in a northeast direction.

The proposed discharge surface water connection from the site to the existing field drain is centrally located in the development and runs in an easterly direction which then discharges to the Tolka River. The connection point is within the ownership of the client.

The entire development will be constructed in two phases which is under the ownership of the applicant. The current site will be one catchment area and will be attenuated to reflect the greenfield run off rate.

It is proposed to use a sustainable urban drainage system (SuDS) approach to stormwater management throughout the site. The overall strategy aims to provide an effective system to mitigate the adverse effects of urban stormwater runoff on the environment by reducing runoff rates, volumes and frequency, reducing pollutant concentrations in stormwater. The proposed SUDs that feature in the development are modular permeable paving, swales, bioretention, detention basins, and Hydrobrake flow control.

13.3 Foul Water Design

The internal foul network has been designed in accordance with Uisce Eireann Code of Practice for Wastewater Infrastructure (2025). The proposed foul sewer network will connect to the under construction foul sewer pumping station located within the proposed phase 1. The discharge for the site is to an existing 450mm foul sewer located along the Navan Road. For network design consult engineering drawing nos. 2024-114-030311 - 2024-114-030312 - 2024-114-030313 - 2024-114-030314. For pumping station design and connection point consult engineering drawings nos. 2024-114-030381, 2024-114-030382 and 2024-114-030383.

The foul water drainage system for the proposed development has been designed in accordance with the Uisce Eireann Code of Practice and will be separate to the surface water drainage system. The foul water from the development will discharge via soil vent pipes within the buildings by gravity flow before connecting into the proposed foul sewer

pumping station. The foul sewerage for each house will have a separate connection to the proposed 225mm and 150mm diameter foul sewer along the road.

13.4 Watermain

Following consultation with Uisce Eireann the watermain network has been designed in accordance with IW Code of Practice for Water Infrastructure. As part of the design for phase 1, as per granted permission under planning Ref. ABP-3200449-24, Irish Water are finalising a design for a new 300mm watermain which will be taken from the 350mm main along the R147. A 225mm diameter HDPE watermain is proposed to supply water to the proposed development. Refer to watermain drawings number 2024-114-030301 and 2024-114-030302.

Individual houses will have their own connections to the distribution main via service connections and boundary boxes. Individual service boundary boxes will be of the type to suit Uisce Eireann and to facilitate possible future domestic meter installation.

The water main layout and details are in accordance with Uisce Eireann Connection and Developer Services, 'Code of Practice for Water Infrastructure' and 'Water Infrastructure Standard Details'.

A pre connection enquiry was lodged with Uisce Eireann and the Confirmation of Feasibility has been granted.

13.5 Gas

There is no existing gas pipeline located in the adjoining lands and no connections to the natural gas network will be required.

13.6 Power

Four substations will be provided to serve this development. The proposed substation will provide power to a number of mini pillars which will provide power to the residential dwellings.

Power supply and the requirement for any alternations to the existing power supply network for the development of the subject site, will be agreed with ESB Network in advance of construction. All power supply related works will be carried out in accordance with ESB Networks relevant guidelines.

The installation of the utilities will be conducted in parallel with other services and will primarily involve construction of ducting and chambers.

No significant impacts from the Construction or Operational Phase of the development are likely, because of the connection to the network.

13.7 Communications

Virgin and Eircom networks were installed along the existing Kennedy Road on the south of the site.

The installation of the utilities will be conducted in parallel with other services and will primarily involve construction of ducting and chambers.

No significant impacts from the Construction or Operational Phase of the development are likely, because of the connection to the network.

13.8 Waste

The site is a greenfield with no waste facilities. There are a number of waste collectors operating in the area collecting the waste from the dwellings further south of the development and it is anticipated that during the operational phase a similar plan will be in place.

CHAPTER 14 | Biodiversity

This Biodiversity Chapter details the Ecological Impact Assessment (EcIA) of the Proposed Development, which assesses the potential effects of same on habitats and species; particularly those protected by National and International legislation or considered to be of particular nature conservation importance. This describes the ecology of the Site and surrounding area, with emphasis on designated sites, habitats, plants, and animals, and will assess the potential effects of the Construction and Operational Phases of the Proposed Development on these ecological receptors.

A detailed desk study, in combination with a suite of field surveys, was carried out regarding the Proposed Development. Field surveys included: habitat/flora (including invasive plants) surveys, breeding bird surveys, wintering bird surveys, mammal surveys, Otter and Kingfisher surveys and bat surveys. All surveys were carried out at the appropriate time of year, and no limitations were encountered in the preparation of this Chapter.

Eleven protected designated sites/areas that were considered to fall within the precautionary zone of influence (ZOI) of the Proposed Development were deemed to be linked to the Proposed Development by impact pathways. These designated sites are all associated with Dublin Bay downstream along the River Tolka; the Dublin Bay UNESCO Biosphere, North Dublin Bay SAC (000206), South Dublin Bay SAC (000210), South Dublin Bay and River Tolka Estuary SPA (004024), North Bull Island SPA (004006), North-west Irish Sea SPA (004236), two Ramsar sites: Sandymount Strand/Tolka Estuary (832) and North Bull Island (406), and three pNHAs; South Dublin Bay pNHA (000210), Dolphins, Dublin Docks pNHA (000201) and North Dublin Bay pNHA (000206).

These protected sites/areas all overlap and are all linked to the Site of the Proposed Development via one hydrological pathway in the form of the River Tolka which runs through the eastern section of the Site. The potential impacts to the SACs and SPAs are assessed in detail in the Appropriate Assessment (AA) Screening and Natura Impact Statement (NIS) that accompany this application under separate covers. Dublin Bay UNESCO Biosphere, as well as the pNHAs and RAMSAR sites assessed in this Chapter are covered by proxy by the mitigation detailed in the NIS; as the potential impacts and necessary mitigation identified are the same as those detailed for the SACs/SPAs, due to the similarities in the impact pathways (pollution of the Tolka and Dublin Bay) and of the important features for which these sites are designated (i.e., coastal/wetland habitats and waterbirds). Therefore, no designated Sites are considered further as key ecological receptors (KERs) in this Chapter.

The majority of the Site is comprised of agricultural grassland known to have supported sheep and cattle in the recent past. Linear stretches of treeline and hedgerow criss-cross the Site, following the field boundaries. Drainage ditches mirror the hedgerows and treelines at the Site. A section of arable crop field is included within the western section of the Site. Mixed broadleaved woodland is present in the form of a planted band of trees running along the berms of the R157 road. This feature makes up the eastern boundary of the main Site area. The River Tolka represents lowland depositing river habitat, and a small section of wet grassland is present within the Tolka's floodplain in the east of the Site. The river supports potential Annex 1 priority tufa springs habitat [7220] and this has been assessed to be of National Significance following the precautionary principle. Buildings and artificial surfaces habitat is present in the form of the sections of road, farmland and structures included within the Site. Only one invasive plant was recorded; Sycamore, (*Acer pseudoplatanus*) located within the hedgerows at the Site.

The Site is considered to be of local importance to breeding birds due to the number of species recorded within or over the Site. The Site provides suitable foraging and nesting habitat for the majority of species recorded; through its various hedgerows. The Site supported no target waterbird species foraging on the Site during the winter bird surveys and is not considered to be an important *ex-situ* site for wintering birds. Kingfisher (*Alcedo atthis*) were recorded during a survey of the Tolka, and likely forage along the river. No suitable nesting habitat or nest holes were observed during the surveys although suitable perching habitat is present along the river. A clear-span bridge is proposed to cross the Tolka as part of the Proposed Development, therefore the Tolka and the fish species it supports were also considered as part of the EcIA.

Signs of Badger (*Meles meles*) were recorded at the Site, with a group of latrines recorded along the western R157 woodland berm. Otter (*Lutra lutra*) prints were recorded downstream of the proposed bridge crossing during the survey

of the Tolka and a spraint was recorded in previous years. The river provides suitable otter habitat, although no holts or couches were found. Hedgehog (*Erinaceus europaeus*) habitat exists on Site in the form of the hedgerows, although none were observed during surveys. Young Common Frog (*Rana temporaria)* were recorded within drainage ditches in the east of the Site and suitable habitat is present throughout.

Bat surveys in 2024 and 2025 recorded a total of six bat species/species groups; regularly occurring Common pipistrelle (*Pipistrellus pipistrellus*), Soprano pipistrelle (*P. pygmaeus*), and Leisler's Bat (*Nyctalus leisleri*), and infrequently recorded Brown long-eared bat (*Plecotus auritus*), Nathusius' pipistrelle (*P. Nathusii*) and unidentified *Myotis* bats species. Bat activity was associated with the vegetated boundaries of the Site, with several hot spots recorded. Bats use the various field boundaries as commuting/foraging routes, linking in with the adjoining lands. Bats were recorded using the Tolka to forage and commute during the transect surveys and the static monitoring surveys. The trees and structures (barns and prefabricated structures) at the Site provide little to no roosting potential.

The following habitats and species were considered as KERs as part of the EcIA of the Proposed Development:

- Hedgerows (WL1), Treelines (WL2) and Drainage Ditches (FW4).
- Mixed broadleaf Woodland (WD1).
- River Tolka (FW2).
- Potential Annex 1 habitat: 'Petrifying springs with tufa formation (*Cratoneurion*)' [7220].
- Hedgehog, Badger and Otter.
- Breeding Bird Assemblage.
- Bat Assemblage.
- Common Frog.
- Fish Assemblage of the Tolka.

Potential sources of adverse effects were identified and can be summarised as potential Construction Phase effects via habitat loss or damage, habitat fragmentation, increases in noise and dust emissions; direct mortality or disturbance of breeding birds, mammals or amphibians during vegetation clearance; runoff of sediment or other water borne pollutants into the drainage ditches, River Tolka and designated sites located downstream, pollutants affecting aquatic species during the Construction Phase, and light pollution impacts to nocturnal species e.g., bats. Operational Phase impacts can be summarised as light pollution impacts to bats, small mammals and birds, and possible disturbance impacts to local mammals due to residents and dogs.

The integrated design features and mitigation measures recommended to address the above potential impacts include the preparation of, and adherence to, a robust and comprehensive Construction Environmental Management Plan (CEMP) by the contractor for the duration of the Site works. This will bring together and set out all of the environmental control measures (including those detailed in the NIS) required to minimise, and control adverse environmental impacts associated with the Proposed Development. The timing of the various construction works will follow a predetermined construction timeline that will ensure that certain works e.g., the construction of the bridge over the Tolka, will be conducted between July and September; to ensure impacts to salmonid fish species during their spawning season are avoided.

The above timing of works must also take into account the breeding bird season, and the breeding season for Common Frog. Pre-commencement surveys for Badger and Otter are recommended to confirm whether any change has occurred to the status of both species at or near the Site since the original surveys were carried out and to ensure potential impacts to both species are avoided if so. The retention of the existing suspected mammal underpass under the R157, or the provision of a replacement underpass, is recommended to ensure habitat connectivity is retained between the lands east and west of the R157 for mammals e.g., badgers.

Specific Construction Phase mitigation measures are also recommended for: the bridge construction, to prevent mammals to become trapped/injured within the construction site, to minimise noise and dust impacts to local animals/ the River Tolka, and for retained trees to be damaged during the Construction Phase. Silt-fencing will be put in place to

protect the retained drainage ditches from Construction Phase pollution and sediment run-off for the duration of the works. Operational Phase impacts are mitigated by way of a post construction check of the public lighting by an ecologist.

Enhancement measures recommended for the Site include features, such as bat boxes and log piles to be located at suitable locations around the Site, and the adoption of a low-intervention Hedgerow Management Plan which will maintain the retained hedgerows at the Site in as natural a state as possible to maximise the biodiversity value provided by these features at the Site and link them with the surrounding lands.

The monitoring proposed for the Proposed Development includes the involvement of an Ecological Clerk of Works (ECoW) for the duration of the Construction Phase. The ECoW will work with the Contractor to ensure that pre-commencement species surveys are carried out and that all construction mitigation is working effectively throughout the Construction Phase.

Operational Phase monitoring will include the monitoring of all enhancement measures by an ecologist e.g., bat boxes, to assess whether they are effective. This will also include a review of the Hedgerow Management Plan and summertime checks over 2-3 years to ensure correct landscape management is being carried out.

No significant cumulative effects involving the Proposed Development and other developments were identified. Any potential cumulative effects are largely linked to a loss of commonly occurring agricultural habitats to development in the area and combined water quality degradation in the River Tolka, in the absence of appropriate mitigation. In terms of residual effects, the mitigation measures detailed in this Chapter, along with the design features to be adopted to minimise adverse effects to animals at the Site, will be sufficient to reduce any identified potential effect on KERs associated with the Site to 'not-significant' at the local level. It is considered that provided the mitigation measures proposed are carried out in full, there will no significant adverse effect on any valued habitats, designated sites or species as a result of the Proposed Development.

CHAPTER 15 | Cultural Heritage & Archaeology

The chapter assesses the effects of the proposed development on the cultural heritage resource, including archaeological and architectural heritage. The recorded and potential cultural heritage resource within a study area encompassing the lands within the proposed residential development site and the surrounding lands extending for 1km in all directions, was reviewed during the desktop study in order to compile a comprehensive cultural heritage baseline context.

Recorded Archaeological Heritage

The Sites and Monuments Record (SMR) lists two recorded archaeological sites within an area of the proposed development boundary that extends along a section of the Dunboyne Link Road and these comprise an area of structural remains (ME050-057----) and a burnt mound (ME050-058----) both of which were discovered during archaeological investigations during the construction of this roadway. The former site was fully excavated while the latter was partially excavated with a section extending outside the road-take, and outside the proposed development boundary, was preserved *in situ*.

The RMP/SMR list an additional 17 recorded archaeological sites, none of which have extant above ground remains, within the surrounding 1km study area and these include 11 examples which were identified and excavated in advance of the construction of the M3 motorway and Dunboyne link road. The archaeological sites which have been subject to full archaeological excavation no longer remain *in situ* and are deemed to be of negligible value. The levelled examples within the study area that have not been subject to archaeological excavation likely retain sub-surface remains of potential high value but are not sensitive to effects on their setting.

The Archaeological Survey of Ireland inventory descriptions for each of the archaeological sites within the study area are presented in Appendix 15.2, which contains information sourced from reports on the excavated examples.

Architectural Heritage

There are no extant buildings of any date located inside the boundary of the proposed development site and the existing built environment within its immediate surrounds to the north is modern in date with green field lands located in other directions. The Meath Development Plan 2021-2027 does not list any Protected Structures or Architectural Conservation Areas within the proposed development site. In addition, the National Inventory of Architectural Heritage (NIAH) also does not list any structures or historic gardens/landscapes within the proposed development site.

There is one Protected Structure located within the 1km study area and this comprises an early 20th century terrace of ten houses located on St. Marys Road in the north end of Dunboyne town (ref. PS 91540) (Figure 15.1). The NIAH also lists one structure located within the 1km study area and this comprises a 19th century railway bridge (NIAH 14405001) located c.165m outside the east end of the site boundary. The housing terrace and railway bridge have been assigned regional ratings by the NIAH, which is indicative of a medium value

Cartographic Review

A review of historic mapping, as well as modern aerial, satellite and LiDAR imagery, revealed no evidence for the presence of unrecorded archaeological sites within the proposed development site and no surface traces of any potential archaeological sites or structures of architectural heritage interest were identified during field inspections. The only feature of cultural heritage interest identified within the proposed development site during the desktop study and field inspections was a field boundary which form sections of the townland boundaries between Bennetstown and Dunboyne.

Mitigation measures carried out

The potential for the presence of unrecorded, sub-surface archaeological remains within the proposed development site was noted and a non-intrusive geophysical survey of all suitable green field areas, under licence by the National Monuments Service, was carried to inform the assessment. The survey area included lands that are outside the proposed Phase 3 development area.

The main potential feature (Anomaly 1), noted in the northwest portion of the greenfield area, is the section of a large circular enclosure with a maximum diameter of c.60m and the northwest end of this site appears to extend into a field to the west which is in third-party lands. The full extent of the section of the enclosure identified during the geophysical survey is located within the proposed Phase 3 development boundary.

Another possible enclosure or early field plot (Anomaly 6) was identified in the west end of the survey area and is perhaps associated with two linear ditches/drains (Anomaly 7) which extend outward from its location to the east, and these are located within the boundary of the proposed Phase 3 development.

The entirety of the identified extents of Anomalies 2-5 are located outside the boundary of the proposed Phase 3 development.

The results of the survey are summarised within the chapter and a full copy of the geophysical survey report is presented in Appendix 15.4.

The programme of geophysical survey was followed by targeted archaeological test trenching within lands on the west side of the Dunboyne Link Road has confirmed the presence of the sub-surface remains of a previously unrecorded enclosure (Anomaly 1) located within the boundary of the proposed development.

In addition, a geophysical survey of lands on the east side of the Dunboyne Link Road, which was carried out as part of the assessment of the proposed Phase 1 development in this area, identified a potential ringfort site (Anomaly M4:4) within the line of a foul sewer which was also included in the Phase 1 and 2 developments.

Predicted Impact

The construction and operational stages of the proposed development would have no predicted effect on any archaeological sites listed in the SMR or RMP or on any recorded architectural heritage structures. Ground excavation works during the construction phase will have the potential to result in permanent, direct, moderate to significant, negative effects on the sub-surface features identified during the geophysical survey and this will require mitigation. The construction phase would also result in a permanent, direct, slight, negative effect on the sections of the townland boundary extending within the proposed development site. No potential significant cumulative impacts on the cultural heritage resource were noted during an appraisal of the proposed development in combination other developments in the area.

Construction Phase Mitigation

Following a grant of planning, and in advance of the construction phase, a suitably qualified archaeologist will be appointed to prepare and submit a licence application to the National Monuments to preserve by record (through archaeological excavation) the full extent of the archaeological sites/features located within the boundary of the proposed development.

All archaeological excavation works to preserve by record identified archaeological remains will be carried out under licence by the National Monuments Service and in advance of construction works at their locations. All required

archaeological excavation works, including post-excavation analyses and reporting, will be carried out in accordance with the archaeological method statement submitted to the National Monuments Service and the National Museum of Ireland as part of the licence application. An archive containing stratigraphic records (including all associated digital and hard copy records and reports) will be submitted to the National Monuments Service upon completion of archaeological works.

The appointed archaeologist will also carry out further programmes of archaeological test trenching of other green field areas within the proposed development site as a confirmatory measure. This will be carried out in advance of the construction phase under licence by the National Monuments Service and will comprise test trenching of 10-12% of the green field areas. This will include test trenching at the locations of two geophysical anomalies located within a sports pitch area (Anomalies 6 and 7) and the section of the townland boundary between Bennetstown and Dunboyne within the proposed development site. This townland boundary will also be subject to a written and photographic record. Any archaeological remains identified during the test trenching investigations will be cordoned off, recorded in written, drawn and photographic formats and the National Monuments Service notified.

A report on the test trenching results, including written, illustrative and photographic records, will be submitted to the National Monuments Service, per licensing requirements, who will then be consulted to determine appropriate mitigation measures in the event that previously unrecorded archaeological remains are identified. This will entail either total/partial preservation *in situ* by avoidance or preservation by record by systematic archaeological excavation of any identified archaeological remains where direct impacts are predicted. An Archaeological Impact Assessment will be produced following the completion of the pre-development mitigation measures.

CHAPTER 16 | Significant Interaction of Impacts

The construction, operational and cumulative impacts of the proposed development have been assessed within each chapter of the EIAR. This chapter provides a summary of the significant interactions of impacts identified in the previous chapters.

All potential inter-relationships impact between the various areas covered in the EIAR are listed and the key interactions and interrelationships are summarised. Mitigation measures outlined where required.

With mitigation measures in place, no significant residual negative impacts are predicted.

CHAPTER 17 | Summary of Mitigation Measures & Monitoring

Chapter 17 provides a consolidated summary of the proposed mitigation and monitoring measures identified across all environmental disciplines throughout the EIAR. These measures are designed to avoid, reduce, or offset any likely significant adverse impacts associated with the proposed development.

Each specialist chapter has identified specific measures tailored to their area of assessment, including but not limited to population and human health, land and soils, water, biodiversity, noise and vibration, and traffic and transport. These measures have been integrated into the project design or will be implemented during construction and operation as appropriate.

Some disciplines have also recommended monitoring following the implementation of mitigation. Monitoring will take place post-consent to verify that the development performs as predicted and that mitigation measures function effectively. This monitoring will help ensure compliance with consent conditions and performance standards and will provide early detection of any unexpected impacts or mitigation failures.

CHAPTER 18 | Screening of Major Accidents

Chapter 18 of the EIAR has been prepared by Saoirse Kavanagh, Executive Planning Consultant of McCutcheon Halley Planning Consultancy and provides a review of the characteristics of the proposed development and of the project location to consider potential accident scenarios.

18.1 Flood Risk

A detailed Site-Specific Flood Risk Assessment of the site was carried out by IE Consulting (2025).

The most immediate and significant hydrological feature in the vicinity of the proposed development site is the River Tolka located to the north beyond the eastern boundary of the site (where there is a proposed bridge over the River). There is also a Drainage Channel location in the western area of the site, which converges with the Naulswood Stream at a point located approximately 120m south of the site.

The primary potential flood risk to the proposed development site can be attributed to an extreme fluvial flood event in the River Tolka, the Drainage Channel and the Naulswood Stream located in the vicinity of the site.

18.2 Seismic Activity

In Ireland, seismic activity is recorded by the Irish National Seismic Network. The principal events have occurred along/ beyond the east, south-east and south of Ireland with seismic movements generally up to 2.9 Magnitude recorded on land with no large seismic events recorded in the immediate vicinity of the subject site.

18.3 COMAH/SEVESO Sites

The Seveso Directive (Directive 82/501/EEC, Directive 96/82/EC, Directive 2012/18/EU) was developed by the EU after a series of catastrophic accidents involving major industrial sites and dangerous substances.

There are 6 no. SEVESO sites within 6km of the site and a further 2 no. within 10.5km of the site. Given the distances between the subject site and these Seveso sites, it is not considered a concern for the proposed development at construction or operational phase.

18.4 Residual Impact Assessment

18.4.1 Construction Phase

No scenarios of concern have been identified during the construction phase. As such the predicted impact is considered to be short term, imperceptible and neutral.

18.4.2 Operational Phase

Once the mitigation measures designed into the scheme are implemented correctly, the predicted impact as a result of flooding is long term, imperceptible and neutral.

18.4.3 Cumulative Impact

Cumulative impacts are considered imperceptible and neutral.

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